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# THE CONDOR

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## MEETINGS OF THE COOPER ORNITHOLOGICAL CLUB

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# THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



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## NOTES ON THE NESTING OF THE REDPOLL

By LEE R. DICE

WITH TWO PHOTOS

NOTES on three nests of the Redpoll (*Acanthis linaria linaria*) found in the interior of Alaska are here presented as an addition to our knowledge of the breeding habits of this species. These notes were secured by the author while a Deputy Fur Warden in the Alaska Fisheries Service, and they are published with the permission of the United States Bureau of Fisheries.

During the winter, Redpolls are found in flocks consisting of a few individuals up to several hundred, but in the spring the flocks break up and the birds pair off. On the North Fork of the Kuskokwim River, near its head, pairing began in 1912 during the last week in April, but a flock of fifty was seen as late as May 7. The exact position of this locality is about seventy-five miles almost directly south of Tanana, Alaska, and about eighty miles north and a little west of Mount McKinley.

In this region the valleys and low hills are largely covered by an open scrubby forest of black spruce, beneath which the ground is heavily carpeted with sphagnum moss. Lakes and small streams are numerous. Along the streams and extending up on southern hillsides are patches of paper birch and white spruce forest, while on the river bars thickets of willow and alder are common.

The first nest was found May 20, and was apparently completed. The nest was placed about four feet above ground in a willow which was growing at the edge of the river in a fringe of willows and alders. The following day, May 21, two more nests were found, both incomplete. One of these (no. 2) was about three feet from the ground in a small paper birch which was in a partly open place where the paper birch and white spruce forest had been burned off a number of years before. It was about twenty feet from the river, just behind a screen of willows. The other nest (no. 3) was about five feet high in a willow,

which with others formed a narrow fringe along the river. All these nests were included within a distance of a half-mile along the stream.

The work of building the nests, incubation, and care of the young seemed to be entirely performed by the females, and the males were not seen near the nests after the eggs were laid. Each nest was a dainty cup of dried grass lined with feathers and down, and each was placed in a fork alongside the main stem of the shrub.

Eggs seemingly were laid one each day, as shown in the accompanying table. The cases where two eggs apparently appear in one day are probably due to one egg having been laid after my visit the first day and the other before my visit the second day. The number of eggs in the complete set was four in nest no. 3, and five in each of the other nests. The eggs of nest no. 3 were collected on May 30 when the set was seen to be complete.

Incubation was in progress in all nests on May 29, but may have begun on May 28, for the nests were not examined on that day, or perhaps even earlier in



Fig. 23. NORTH FORK OF THE KUSKOKWIM RIVER ABOUT A HALF-MILE BELOW WHERE THE REDPOLL NESTS WERE FOUND. A GROWTH OF WILLOWS CAN BE SEEN ON THE RIVER-BAR AT THE LEFT OF THE PICTURE, AND IN THE DISTANCE A FOREST OF PAPER BIRCH AND WHITE SPRUCE.

nest no. 2, where the female was on the nest when it was seen on May 27. Due to a collecting trip to an adjacent mountain the nests were not visited on June 4, 5, or 6, so the time the eggs hatched is not exactly known, but was, for the two nests remaining, sometime between June 3 and June 7.

Three eggs of nest no. 1 failed to hatch, though all hatched in nest no. 2. A male was collected May 19 near the site of nest no. 1, before the nest was found. Perhaps he was the mate of the female of this nest, and his loss may have been the cause of the infertility of part of the eggs. Apparently the male has no function in the home life of the Redpoll other than to fertilize the eggs.

Of the two nestlings in nest no. 1, one grew much more rapidly than the other, but both grew more rapidly than the five in nest no. 2. By the time the young birds were able to fly the nests had become foul with excrement, and the

edges of the nest-cups had been broken down by the weight of the growing nestlings.

A well-grown young Redpoll was collected in alders by the river on May 30, so these nests were not the earliest for the year, and it is possible that they represent a second brood. The time required to build a nest and rear a nestful of young Redpolls to the time when they leave the nest is apparently just about a month.

RECORDS OF REDPOLL NESTS			
1912	Nest No. 1	Nest No. 2	Nest No. 3
May 20	completed	.....	.....
May 21	completed	building	building
May 22	completed	building	building
May 23	1 egg	completed	completed
May 24	2 eggs	2 eggs	1 egg
May 25	3 eggs	.....	2 eggs
May 26	4 eggs	4 eggs	3 eggs
May 27	5 eggs	.....	4 eggs
May 29	5 eggs	.....	4 eggs
May 30	5 eggs	5 eggs	4 eggs
June 3	5 eggs	5 eggs	.....
June 7	2 nestlings	5 nestlings	.....
June 17	all left nest	all left nest	.....

*Missoula, Montana, January 26, 1918.*



Fig. 24. FEMALE REDPOLL ON THE NEST (NO. 2) IN A PAPER BIRCH SHRUB, NORTH FORK OF THE KUSKOKWIM RIVER, ALASKA; MAY 30, 1912.

## A RETURN TO THE DAKOTA LAKE REGION

By FLORENCE MERRIAM BAILEY

*(Continued from page 114.)*

## III. AMONG OLD FRIENDS

THE TIME to find water birds on Stump Lake, as I had learned on my previous visit, is during the wonderful 'northern flight' in late fall; but as I must leave North Dakota before that, I went there for a week in the middle of July, hoping to find nests of the White-winged Scoter and to be able to explore the surrounding marshes within easy reach by the Ford that the good people of Hawk's Rest, with whom I had stayed before, had now equipped themselves. But just before my arrival, such heavy rains fell that the country was all afloat—from one point thirteen rich ultramarine rain pools were seen in the wheat fields! The road from the station over which we were glad to be able to make our way with horse and buggy, had to be abandoned at intervals for temporary roads through grain fields, and a place was pointed out where, when road work was resumed on a submerged grade, a horse mired, and on struggling slipped into the slough beside the grade, almost drowning before another horse could be hitched to him to haul him out. It was evidently a poor time for automobile explorations.

There was much to enjoy, however, from the green billowy terraces of the old glacial moraines to the wide band of greenwood back of the lake rich with memories of nesting owls and Purple Martins, together with the smell of new mown hay that came gratefully on the soft breeze after storms. All these and the kindly welcome and hospitality accorded me by my white-haired friend and her daughters made my week among old friends, both avian and human, a delightful one.

On reaching the lake, the White-winged Scoters were my first concern. Remembering that I had been told that they sometimes nested in silver-leaf bushes along the shore, I started out to look for them, accompanied by the friend who had helped me photograph nestling Marsh Hawks on my previous visit, a little girl, and two bird dogs which, in running around after Prairie Hens and other game, would be likely to discover Scoters if they were there. Walking along different terraces to cover more ground, we followed the lake shore for two or three miles until, on coming opposite the bird islands where the game warden said the Scoters were nesting, we discovered a pair of the Ducks making their way over to the islands. The lake was rough with white-capped rollers and they swam for some time against a current that would have made rowing hard work. Finally the black drake gave up and flew low across the water to the island, but the duck kept on swimming, rocking along with surprising rapidity. As we watched her closely with the glasses, it did not seem such hard work after all. She would ride up on the ridging wave, cut the foam with bill straight ahead of her, and then slide down on the other side, making it a chute-the-chute performance. One or two more pairs of Scoters were seen during the morning, but the strong north wind had driven most of the swimmers to harbor.

Early the next morning when a wide glittering sun path was gradually retreating with the rising sun, four Scoters started to come to shore. One female

when close to the beach began to bathe, putting her bill down in front of her and throwing the water over her back again and again until she was thoroughly soosed, when she waddled up the beach and flapped her wings and preened her feathers. Imagining that she had come in to go to her nest, I moved cautiously from tree to tree and then in among the screening silver-leaf bushes for a better view of her. When the game warden drove by on the way to his boat, she flew out, feet outstretched; but on returning, began preening again. The other Scoters, apparently disturbed by the boat, went on down the lake, and later five sat on the water together. So preoccupied was the one on shore in oiling her feathers that when a young Gull rudely walked right in front of her bill, she never stirred. When she did stop a moment, it was only to look out over the lake where her friends were resting. Meanwhile five ducks, quacking like Mallards, flew over the next point and swerved off over the lake, small sandpipers picked along the edge of the slender sandspit, flickers called, and sparrows sang; but still the Scoter stood and preened. From time to time, getting restless, I looked at my watch. Would she never do anything? Finally, after an hour and a half of waiting, my patience was exhausted and I started for the farmhouse. Looking back, in the faint hope that, relieved of my presence, she would be making her way toward her nest, I saw her *sitting down* on the shore!

Another day I watched three female Scoters. Two of them must have been in old worn plumage as they had irregular white patches between the bill and ear such as museum skins of old Scoters sometimes show. One of the Ducks came up on shore and preened, and after a time a second one came up and joined her, waddling near as if for sociability, while the third swam idly along the shore. Once when I moved in the silver leaf the nearest turned and looked at me. This time I waited about an hour, but no one went anywhere. Evidently brooding time had not come, with these individuals.

Meanwhile I was waiting for the game warden to take me to the island to see sitting Scoters said to be so tame that they would let themselves be taken off the nest and photographed. But when the warden was not haying, the motor for his boat was out of order, and when that had finally been taken to town for repairs, something else happened and I had to leave without getting to the island. Unwilling to give up finding a nest, the morning of my departure I again went down to the shore and tramped vainly up and down through the dew-laden silver leaf behind which the Scoters had stood, looking sharply to right and left, remembering that the sitting birds are said to stay on the nest until almost stepped on; but finally when my time was up, had to leave, sorely disappointed.

To make up for this disappointment, while at Devil's Lake the next week, I had the good fortune to have several families of young of different ages come to the shore below the house. One mother came swimming along with twelve small young. At first she was taking the lead, then she waited while they fed, but tiring of that finally swam ahead out of sight, leaving them to dive by themselves. The young seemed decidedly black, but when they rose and flapped their wings showed white not only on the wings but on the breast, and in diving showed white under the tail in going down. At one time only two of the brood were visible, ten being below. When they had fed long enough, one of them took his mother's place and slowly led his brothers up the shore in the direction she had taken.

At Stump Lake, on the day when we watched the Scoters work their way across to the islands, we were keeping an eye out for old Marsh Hawks' nests, and Prairie Chickens and their nests. In the same large silver leaf basin and not far from the nest where we had previously photographed the young Marsh Hawks, my friend showed me this year's nest—more than two feet wide in a bunch of snowberry, rose, and silver leaf. As we were going along the lake shore, Jeff, the "chicken dog", suddenly made a point in the silver leaf—nose and tail straight as a ruler—and a Prairie Hen with white-bordered tail suggesting a Meadowlark—disappeared over the bushes. A nest beside an old hay road had been marked with a stone for me, and when it could not be found, the child who was with us and who was collecting stones, was questioned about it; but she replied with grave assurance, "I wouldn't take such a valuable stone."

When the nest was finally discovered in a bunch of snowberry, wild rose, and weeds, on its floor of grass and small sticks lay one unhatched egg and shells of seven others, four of them—as is often the case in hens' nests—with the two halves inside each other. The nest at first discovery had contained sixteen eggs, and at succeeding visits, for some unexplained reason, fifteen, and then fourteen. The mother who was only laying when first surprised on her nest, as my friend explained, "flattered along a ways close to the ground—didn't flop her wings as they do when they have young—and lit maybe a couple of rods from the nest." Later, when the little girl and her father found the Hen sitting, she flew up, "acting as if wounded," the child said.

In the winters, my friend told me, when it gets cold and there is a great deal of snow the Prairie Hens come close to the farmhouse. One was seen on the kitchen doorstep one morning, and a covey of twelve or fifteen close by. A covey that stayed around for two weeks, coming to bare places near the house and picking from tall weeds in the garden, were so tame that the family could watch them through the window, although if they opened the door to throw out crumbs the birds would fly.

By a snowberry patch near the road we twice flushed Chickens about a third grown. One that I caught a glimpse of when off his guard stood in a cocky pose, head high, and short tail up; but as soon as he saw me he crouched, making himself small as he ran down the grass-arched wheel track.

In the woods near the farmhouse where I had watched a Long-eared Owl's nest, Golden-eyed Ducks had nested for a great many years. When the boys of the family had been collecting eggs for the State University, I was told, they had taken two dozen eggs from a single nest—from one to three at a time—the old Duck keeping on laying to replace them; but finally the boys' father had made them stop, to give the Duck a chance to set. Three nests had been found by my friend a few weeks before my visit, two in trees and one in a stump. In the early mornings, she said, the six old Ducks would be seen circling around and around over the trees, flying fast, "as if exercising". Before leaving the nest, the Golden-eyes always cover their eggs, she added, "even when you scare the old Duck out."

One of the nests had been left not long before my visit, and some of the mother's down and bits of green shell could still be seen through the hole in the foot of the tree trunk by which the young had left. The mother herself always went and came at the top of the hollow, my friend explained. In anoth-

er of the year's nests the eggs were so high that my friend, tall as she was, had to stand on tip toe to look in at them. A tree on the edge of the woods above the water had its nest hole about ten feet from the ground, and the old Golden-eye in taking out her young would start with wings spread, the dozen or more yellow downy chicks on her back and, as I was told, "take a slant right down to the water." Once when the old mother was startled, she made a wrong curve and the little ones all fell off. As soon as they struck the ground they ran and hid in the weeds, but as the onlookers stood still, the mother swam circling around, calling to them, when they ran to the lake, and as soon as they struck the water swam off, quite to the manor born.

At Red Willow Lake some years before, the family were sitting close to the nest tree of a Golden-eye, a tree that was close to the bank and leaned toward the lake—when the brood was taken away, and a graphic description of the departure was given me by one of the witnesses. "We heard an odd noise, part of it like the buzz of a bee, and K—— said 'Oh look, look, look!' and pointed, and we all looked up at the tree. The young were on her back as thick as could be, her back was covered from her neck, she was all bushed out with them. She seemed to start to sail down from the branches, not from the hole—she had worked out from the nest to the branches with those little Ducks! Her wings were spread and she kept up that buzzing noise—we thought it came from the old Duck; the little ones couldn't make a noise: they were hanging on. She just kind of sailed down to the water. It was worth seeing—to see those little things!" the genial witness exclaimed, her kindly face all smiles. "One little one slipped off," she went on, "and hung by one feather—it had its little head up stretched out hanging onto the feather. About two feet from the water, three or four dropped off—got tired and couldn't hang any longer. When she struck the water they all just seemed to scatter—like a flash they were all in the water—scattered in every direction. She began calling them then and we made a scurry down to look at them and K—— caught one and we all looked at it and then let it go. When we put the little one down it began to call and she called to it and—my, it scampered! Then she got on the other side of the reeds and it was no time before she had them gathered together. Then they'd swim around. They'd get tired and then they'd climb up on her back—a whole bunch of them as if they got there to rest."

Although I was too late to see the young at Stump Lake, when at Devil's Lake an old Golden-eye several times brought her brood to the stones on the beach below the house. The first time, she got there first and climbed up on a stone and waited till the little brood swam in. One small duckling who was behind the rest made a rush through the water and got ahead and climbed up on the stone beside his mother with a pretty air of being glad to get back to her. When the young were huddled together on one stone, their mother sat on another, but when she became absorbed in preening herself—throwing up her dark ball of a head showing her light throat, and rising till she showed her white belly—the youngsters dropped off the rock into the water and dived and swam—swam around at the foot of the rock and then went on along the shore feeding partly from the surface, partly below. The next day a slight noise from the water proved to be the ducklings chasing each other. The mother sat on her stone letting them play, and two of them finally waddled up on a second stone. But the Golden-eyes did not monopolize the stools. One day when the old Duck sat on her stone and three of her ducklings each on his

own, a Snipe sat on the next in the row, and Franklin Gulls on still others down the beach.

Among the birds of Stump Lake should be mentioned a Voice of the Night, for although no Bittern was seen there, at eleven o'clock one night, when I was watching the stars and enjoying the peace and beauty of the night, the stillness was broken by its remarkable performance, coming from a slough close by. So realistic was it that I could well believe the story of the Norwegian girl at Sweetwater, who ran in to her mother, demanding excitedly, "Say, ma, have they got a new wooden pump at Smiths? I could just hear it pumping!" In this case the pump seemed an old, squeaky one hard to start, though once started it went on with a goodly *pump, ump, ump*. "Its the Pump Sucker!" one of my friends exclaimed, and I congratulated myself that at last I had heard the Bittern's famous performance.

It was followed by Sora songs and a fast *cuck-cuck-cuck-cuck* ending with a slow *cow-cow-cow*, possibly from an awakened Cuckoo neighbor. Soras were heard on several nights between ten and eleven from a grassy slough near the house, and during a thunder storm one night they burst out into song, several singing together, one breaking out before another was through. They sang about half past one just before the rain fell and they may have been roused by the lightning. The next morning I whistled them up as I went along the wooded border of the slough, and sometimes three or four sang as I passed. But the Bittern, if there, kept silent.

While the Bittern's pump was a new and exciting experience to me, other experiences were pleasant reminders of my first visit to the region. The House Wrens were singing as gaily as ever, and two pairs at least had nests near the house, one in a bag of thin carpet tied to a branch, and the other in a split in the cushion of a wagon seat. "I've had them start to build, to put in little twigs in the shirt sleeves on a clothes line," my white-haired friend told me, adding, "we'd hang them out in the forenoon and when we come to take them in at night there'd be a lot of sticks in some of them." When she hung up an old coat the Wrens made nests in the sleeves and pockets and lining, and as she said, "some would be hatchin' out while others was still layin'."

Among the old friends, Goldfinches caroled as they rolled through the sky and Martins called in loud raucous tones from the woods where I had previously found them nesting. There was also a number of old threads to be picked up near the lake. On the shore near the site of a Spotted Sandpiper's nest found under a silver leaf bush on my former visit, grown young were apparently out of the nest, as I saw four together flying along the shore, and a pair were much disturbed when the "chicken dog" went running down the beach ahead of me. When one of them flew toward us showing its large breast spots, he chased after it, rushing out into the water where it lit on a snag, and afterwards following it on down the beach. A few of the gentle Eared Grebes with the pointed crest which reminded me of those I had seen along shore before—watched the "chicken dog" nervously, and after looking this way and that, dived, and swam under water farther out in the lake.

At sunset one night I saw four large hawks, apparently full grown Ferruginous Rough-legs, doubtless from the great ancestral nest I had visited four years before, standing statuesquely, one on a stump beside the water, two on a large rock close by, and the fourth on an upturned root, where from the distance their light breasts looked buffy in the evening light. Once a parent

was seen perching on a good outpost, on top of a bare dead tree crowning the high bank above the lake; and again one was seen flying in from across the lake, perhaps from a foraging trip for the evening meal of the young. The young were evidently well cared for. In coming up the beach past their perching stumps I found pieces of ground squirrel fur and bones on the ground. There must have been five young for when three had been seen by the lake, as I was going down through the woods toward the great tree containing the ancestral home, two others blundered out, crying in terrified infantile tones quite out of keeping with their big bodies.

Those by the lake had been well guarded by the parent perched high on the bare tree top commanding the lake shore. Big, vital, powerful bird, he seemed a Prince of Hawks, indeed! With keen searching gaze he had leaned down looking at me, showing his small compressed head, aquiline bill, and ferruginous, feathered legs. What a contrast in form and bearing to the other brown, white-rumped hawk—the Marsh Hawk—seen flying low, face down, around the neighborhood! The keen-eyed Archibuteo guarding his young made a wide inspecting swoop from the bluff in my direction and then silently disappeared. What a satisfaction that the patriarchal nest of these noble birds still honors the traditions of "Hawk's Rest"! A worthy home they have chosen with its old over-topping trees commanding the lake.

And what a beautiful lake! In contrast to the Sweetwater Lakes with their shaded and marsh bordered shores, the charm of this large bare lake with its long sandspits at the turns of the bays was very great. Especially beautiful was it in the evening light when, in the west a wide band of orange light glowed above the green trees, which shadowed the bay, the eastern shore as it sloped widely back glowed green, and soft sunset lights rested on the open face of the water. A line of scoters swam out on the white water, a hawk flew steadily across the width of the lake, and my friends walked along the shore picking up choice stones and interesting bits of petrified wood, while I delighted in the beauty of open water and sky.

And what glorious nights! The screened porch was so high that it was almost equal to sleeping under the stars in camp, and in the cool pure night air, with the sky full of glistening stars, after the enclosing walls of a house it seemed like a return to an old loved home. We gazed up at the shining host, the bigness and wonder of the unnumbered worlds beyond ours growing upon us till my friend exclaimed, with awe in her voice, "To think they are all out in space!"

*(To be continued.)*

## THE YOLLA BOLLY FOX SPARROW

By JOSEPH MAILLIARD

**A**S WE BECOME better acquainted with the genus *Passerella* we find it proving to be one of the most plastic forms of our North American avifauna. It bids fair to rival even the *Melospiza* group, which has been split up into subspecies from so many different localities that it is hard to keep track of them. It has been said that we have song sparrows described from every marsh in California! While this is not literally true, there certainly are remarkable differences in a great many instances, and we are finding the same sort of thing in the fox sparrows.

For some years students interested along these lines, especially observers on the Pacific coast, have been sorely puzzled by the differences among individual specimens of *Passerella* found in winter in the same localities. These differences were such as could only be accounted for upon the hypothesis that they indicated separate forms, each with its definite breeding ground, and not that they were individual variations of any one race. As time goes on and we have more numerous and widespread records, with more detailed observations, we are discovering that this hypothesis is the correct one.

Readers of THE CONDOR may remember that their attention was called to the occurrence in winter in Marin County, California, of a very large-billed fox sparrow which seemed more nearly related to the Stephens Fox Sparrow (*Passerella iliaca stephensi*) than to any other known form (CONDOR, xiv, March, 1912, p. 63). Alternative explanations of this occurrence were that either there was an undiscovered race closely approaching *stephensi* breeding somewhere to the north of Marin County, which it visited in winter; or else, contrary to the rule that in the northern hemisphere birds do not winter north of their breeding range, these individuals were actually examples of *stephensi* which had straggled northward in the winter season. At the time I first took up this matter the only specimens of *stephensi* available for comparison were in worn summer plumage, while the Marin County birds were in bright new feather. This made the comparison very unsatisfactory, in that the difference in color might be accounted for by this fact. Measurements of parts unaffected by wear were practically identical in the two lots. This Marin County form was again mentioned in THE CONDOR, xv, March, 1913, p. 93.

Since that time material has been accumulated in the way of breeding birds obtained in Trinity and Tehama counties, California, by collectors from the Museum of Vertebrate Zoology of the University of California, which proves that there actually is a race of fox sparrow breeding to the north, as already suspected. But this form, for want of sufficient material for seasonal comparison, was still linked up with *stephensi* of southern and southeastern California. Recently, however, Mr. H. S. Swarth of the Museum of Vertebrate Zoology, has become interested in the status of the *Passerella* group and has gotten together a large number of specimens for comparative study. While working over these he came across just the sort of material needed to put together the chain of evidence in favor of the distinctness of this new form, and kindly notified me of the fact, we having often discussed this matter together. As he is working out the status of the subspecies of *Passerella* on this

coast, details of the winter distribution of this subspecies are left for him to touch upon in his coming paper.

The principal differences between this new form and those nearest to it lie both in coloration and in size and shape of the bill. It is impossible satisfactorily to express these differences in the name of the subspecies, so a minor characteristic which can easily be expressed, has been featured in the designation. The tail averages a little shorter than in *stephensi*, and is shorter compared with the wing than in the other forms approaching it, hence the name *brevicauda*. A geographic designation would have been preferable, but the most applicable one, that of the type locality, is too clumsy to latinize, though possible to use unaltered for the vernacular name. The type, a breeding bird, comes from the Yolla Bolly Mountains, which lie partly in Tehama County and partly in southern Trinity County, California. The whole area of the breeding range has not yet been determined.

***Passerella iliaca brevicauda*, new subspecies**

**Yolla Bolly Fox Sparrow**

*Type*.—Female adult, no. 23924, Museum of Vertebrate Zoology;  $\frac{1}{2}$  mile south of South Yolla Bolly Mountain, in Trinity County, California; August 7, 1913; collected by A. C. Shelton and George Stone; original number 385.

*Range*.—Breeding on the higher elevations of the Yolla Bolly Mountains, which lie in southern Trinity and northwestern Tehama counties. In all probability this is the race reported as breeding on Mount Sanhedrin in the northern part of Lake County. Winters south as far as southern California.

*Distinguishing characters*.—Very large-billed race, closely approaching *Passerella iliaca stephensi*, but head, including aural region, neck, back, and spots on breast, decidedly brownish, the back being nearly fuscous brown, instead of the mouse gray of *stephensi*. The color of the back of *brevicauda* is the exact match of that seen in many individuals of *Pipilo c. crissalis* from central California. The size of *brevicauda* is about the same as *stephensi*, the only important difference in measurements being that of the tail, which averages a little shorter than that of *stephensi*, and which is also shorter, relatively, as compared with the wing. Measurements of the type specimen are as follows (measured by H. S. Swarth): Wing 81.5; tail 80.5; culmen 14.8; depth of bill 14.0; width of bill 12.0; tarsus 25.0; hind toe and claw 18.0; middle toe and claw 23.0.

*San Francisco, California, May 10, 1918.*

# THE CONDOR

A Magazine of  
Western Ornithology

J. GRINNELL, Editor  
HARRY S. SWARTH, Associate Editor  
J. EUGENE LAW  
W. LEE CHAMBERS } Business Managers

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## EDITORIAL NOTES AND NEWS

Of more than ordinary interest to the ornithologist of studious turn of mind is the recent book by W. H. Mullens and H. Kirke Swann entitled "A Bibliography of British Ornithology from the Earliest Times to the end of 1912" (The Macmillan Company). This is much more than the usual bibliography in that a large share of the space is devoted to biographical accounts of the principal writers; and since a great many of these writers on British ornithology wrote also on general ornithology or the birds of other parts of the world, interesting facts concisely expressed and authoritative as to detail, are provided in regard to many whose names we frequently see in our American literature. Among such names are: Albin, Butler, Clarke (W. E.), Dresser, Edwards (G.), Evans (A. H.), Eytton (T. C.), Godman, Gurney (J. H. Jr.), Harting, Jourdain, Keulemans, Leach, MacGillivray, Millais, Newton, Pennant, Salvin (O.), Saunders, Sclater (P. L.), Seebohm, Selby, and Gilbert White. It is a satisfaction to learn something of the varied histories of these different men.

There has been some criticism of the Editor of THE CONDOR for his failure to publish reviews of all papers and books sent him. It proves impossible for him or his associates to review everything sent in, and anyway our magazine could not afford so much space as would be needed. We must therefore state that we cannot guarantee to give notice to anything sent us. Only a portion of the current titles can be mentioned; and on the other hand we may give notice to some things not sent us directly at all, provided we happen to have access to copies through other channels.

Mr. Alexander Wetmore, of the United States Biological Survey, has been assigned for the summer to a study of the breeding waterfowl in the lake region of northern New Mexico.

Mr. Joseph Mailliard chose the Feather River region of the northern Sierra Nevada for bird study during May and June. Very little has ever been reported concerning the birds of this district and we look forward with interest to the results of his enquiry.

Mr. A. B. Howell, accompanied by Mr. Luther Little as assistant, is carrying on field work this summer for the United States Biological Survey in Yuma County, Arizona.

The Cooper Club membership roster published in the present issue was compiled by Mr. J. Eugene Law, who requests that any corrections or changes be reported to him. There are now 600 names in the list.

Messrs. Joseph Dixon, Richard M. Hunt, and Halsted G. White have been doing field work this season for the California Museum of Vertebrate Zoology in the San Joaquin Valley. While their attention has been largely centered on economic problems having to do with rodent control, it has proven possible to devote time now and then to birds, with some results of more than passing interest.

## PUBLICATIONS REVIEWED

THE CROW AND ITS RELATION TO MAN, by E. R. KALMBACH, Assistant Biologist (=United States Department of Agriculture, Bulletin no. 621, Contribution from the Bureau of Biological Survey); February 16, 1918; pp. 1-93, 2 plates, 3 text figures.

In its preparation and general make-up, this bulletin reaches the high standard set by the other recent economic publications of the Bureau of Biological Survey. Mr. Kalmbach has done an excellent piece of work, and has arranged and digested the great amount of data available on the subject in an interesting and convenient manner.

The Common Crow (*Corvus brachyrhynchos* and its subspecies) is the subject of the paper; and in gathering the information presented, 3000 letters of inquiry were sent to observers all over the country and in Canada, and 2118 stomachs, 778 of which were of nestlings, were examined. As one would infer, most of these were obtained where crows are most abundant, namely, in the states north of Virginia and east of the Mississippi River. No comprehensive paper on the subject has appeared heretofore since 1895. To the farmers, of the east especially, this report will be of great value, for it treats in much detail, and under many separate headings, of the food of crows during each month of the year. Kansas is the only state west of the Mississippi from which more than a very few stomachs were available for study, and from the three Pacific states, a total of only 18 was received. This is a pity, in view of the general comprehensiveness of the paper. But then, there are comparatively few localities in the west where the crow is really an economic factor.

Destruction of the eggs and young of other birds by crows is the point which proves to be of greatest interest to ornithologists. Although several instances of such destruction are cited, we cannot help but feel that Mr.

Kalmbach has underestimated the economic significance of this corvine trait. The reviewer was born and raised in Maryland, which is a veritable crow paradise, and he had abundant opportunity of observing the havoc wrought by crows during the nesting season. Lack of space precludes an extended account of this or other interesting points, so suffice it to say that the destruction of only a few insectivorous birds by a crow, means that in order to be beneficial, his chowship would have to spend the balance of his life in pursuing noxious insects!

Valuable tables are given, and an interesting feature is a chart showing the percentages of the different classes of foods consumed during all months. Specifically distinct items to the number of 656 have been discovered on the crow's menu, which is rather large even for such an omnivorous appetite. In fact, it is well-nigh impossible to recall anything biological to which the crow is not partial. The most serious offense of which the black robber is guilty, is the destruction of great quantities of corn, especially just after planting, and this grain forms the principle single item of food, amounting to 65 per cent of the stomach contents during December. Other grains are eaten in smaller amounts; and lesser deprivations, in the way of destruction of fruit and vegetables, poultry, beneficial insects, reptiles, and even small pigs and lambs, are listed. Against this is the consumption of harmful insects (including many grasshoppers), weed seeds, some small mammals, and carrion, in the control of which last the crow is no mean rival of the buzzards. Mr. Kalmbach thinks that the harm which the crow does is almost counterbalanced by its good traits, but this seems still to be an open question, and one which will be vigorously argued by the farmer who has lost an entire crop of melons or a planting of corn in a short time. Whether we catalogue him as an undesirable or not, the crow is here to stay, for no destructive agency yet devised by man is capable of removing him, and the long black ribbon of his followers, from an eastern winter sky.—A. B. HOWELL.

Included in the "SUMMARY REPORT OF THE GEOLOGICAL SURVEY, DEPARTMENT OF MINES, FOR THE CALENDAR YEAR 1916" [Ottawa, Canada, 1917] there are several "Divisional Reports" treating of collections of birds, by P. A. Taverner or R. M. Anderson. Those by the first mentioned author pertain to collections made near Barkley Sound, Vancouver Island, in midwinter (pp. 355-357), at mainland points in British Columbia during the summer months (pp. 359-368), and in Manitoba (pp. 371-374). The Barkley Sound list is of especial interest from the time of year at which the collection was made, and doubtless the mainland reports also contain records of value, but the feature of the three

papers that calls for special comment is the rather startling innovation in style introduced by the author.

Subspecies are ignored in all the headings. The scientific name of the *species* is given in binomial form, and the English name is that applied to the whole specific group or else to the eastern race. Thus, although the Cassin Vireo is the form of that particular species occurring in British Columbia, it is entered as "Solitary Vireo, *Laniivireo solitarius*." As, in the present state of our knowledge of the ornithology of the northwest, the value of such a report as this one lies largely in the exact subspecific determination of the various forms at the points at which specimens are taken, the procedure here followed seems most decidedly a move in the wrong direction. In nearly every instance the author's comments upon the specimens examined treat of the racial peculiarities exhibited, and in the many cases where he has evidently made up his mind as to the subspecies represented there seems to be no good reason why the proper subspecific name should not be placed plainly as a heading. There is no evident gain in the procedure he has followed, but there is, on the contrary, throughout all three reports, an atmosphere of vagueness and uncertainty that detracts greatly from their value. Certainly there are many "records" incorporated therein that can be used by no one else, at least in any study of geographical distribution, without re-examination of the specimens listed.

The author seems to be rather pessimistically inclined towards most western subspecies, and while no one could criticize him on that score were his objections clearly stated and his evidence in orderly array, the vague, and in a general way, deprecatory remarks directed against many subspecies now quite universally recognized by other bird students, are of such unconvincing character that for the most part they were better left unsaid until they could be more logically and strongly presented. They are the "dribbling protests" to which Osgood (*CONDOR*, xi, 1909, 107) once rightly took exception.

As an example in point, the treatment accorded the Western Goshawk may be cited. It is entered as "Goshawk, *Astur atricapillus*", with the following comment: "The fineness of the breast vermiculations seems to be more an indication of age than geography; younger birds being more coarsely marked than old ones." Now this may be very true, and it is, of course, a point worthy of careful consideration; but one would like to see some supporting evidence for the conclusion reached. It is an easy matter to make a selection of specimens representing various steps between two extremes, but it does not necessarily follow that any one in-

dividual bird goes through the changes indicated. What reason is there for believing that goshawks with heavier markings are younger than those with finer vermiculations—since the transversely barred plumage, coarsely or finely marked, is the only test we now know for distinguishing old from young? The author may be perfectly correct in refusing recognition to the western subspecies, *striatulus*, but a casual statement of his belief, such as is cited above, cannot by itself be expected to convince others.

At just one point in the paper is a trinomial used: "Hybrid Flicker, *Colaptes auratus* [sic] *cafer*". As no comments are made it is not clear what inference is to be drawn from this manner of entry.

The bird report by Anderson (pp. 376-381) lists species collected by the Canadian Arctic Expedition on the coast of extreme northwestern British America and northern Alaska. Sixty-one species are listed, mostly without comment. Mr. Taverner's peculiar usage of names is not adopted, the more generally accepted classification of the A. O. U. Check-List being followed throughout.—H. S. SWARTH.

THE GEOGRAPHICAL DISTRIBUTION OF COLOR AND OF OTHER VARIABLE CHARACTERS IN THE GENUS JUNCO: A NEW ASPECT OF SPECIFIC AND SUBSPECIFIC VALUES. By JONATHAN DWIGHT, M. D. Bulletin of the American Museum of Natural History, vol. XXXVIII, June 1, 1918, pp. 269-309, plates XI-XIII, 5 figs. (maps) in text.

Dr. Dwight's previous studies of plumage variation, together with his known interest in the group of birds here discussed, render this publication one deserving of more than ordinary attention. The problem concerned is the classification of the juncos so that names may be applied to the various groups of species and subspecies, the method employed is somewhat novel, and the resulting systematic treatment of the genus is radically different from that adopted in the A. O. U. Check-List. While, however, the arrangement of species and subspecies here given may be taken as the author's conception of their proper relationships, the outcome of the careful study of a large amount of material, the treatise itself is more in the nature of an essay on a method of research, rather than the detailed exposition of accumulated data bearing upon this particular problem. Thus, in the author's own words, it is not so much his purpose "to attempt a complete revision as it is to focus attention upon them [the juncos] from a new angle;" and "the winter ranges are not given and other matters of indirect interest are not taken up because they scarcely come within the scope of this particular study of the Juncos."

As a result the reader is confronted with many sweeping statements, rather dogmat-

ically uttered, on points regarding which he might wish to weigh the evidence for himself before accepting the author's classification of the genus as final.

Characters of the juncos are found to be of two kinds, qualitative and quantitative, which include all differences of structure, size, proportions, pattern, and coloration. In structure . . . they are all practically alike; in size and proportions, their differences are quantitative; but, in pattern and coloration, the variations are both quantitative and qualitative." Color characters alone are here considered. Nine areas on the bird's body are differentiated (head, breast, back, sides, wing-coverts, tail, lores, iris, and bill), and each part considered by itself. The geographical distribution of the types of coloration on the several parts is separately platted, and species and subspecies determined according to the extent of coöordination in the several maps. In a general way, of course, this (barring the maps) is very similar to what has been done by most monographers of bird groups, though not usually with the different parts of the bird so rigidly defined, nor with such absolute disregard for other modifying factors. Some of the results attained by Dr. Dwight are more or less in accordance with those of one or another of previous authorities on this group, but the allocation of some forms is so widely at variance with all prior classifications, that, before arriving at a final conclusion, it would seem desirable to give some consideration to factors other than those of color characters, so arbitrarily defined.

Several forms in good standing in the Check-List are here regarded as hybrids, *annectens*, *ridgwayi*, *montanus*, and *dorsalis* being disposed of in this way. The specimens serving as types of *annectens* and *ridgwayi* had already been shown to be clearly of such character by Ridgway, but that *montanus* and *dorsalis* are of the same category is a new idea. The contention appears to be well founded, and is a point of some importance in the author's argument. The occurrence of individual birds apparently of hybrid origin and in sufficient numbers to have long been regarded as representative of distinct forms, is, of course, a feature deserving of most careful consideration in any systematic treatment of the group.

A new name is provided Junco nomenclature, *Junco oregonus couesi*, proposed for the race called *connectens* in the Check-List, and *shufeldti* by Ridgway. *Connectens* is regarded as a synonym of *hyemalis* (in accordance with Ridgway's previous contention), and *shufeldti* as a synonym of *oreganus*. The type specimen of *shufeldti* is a winter collected bird from Fort Wingate, New Mexico, and if this individual is actually an example of the Alaskan Junco *o.*

*oreganus* that has wandered to this southern point it is a fact in migration worthy of more emphasis than it has received. It is a pity that in this case at least the author did not discuss more in detail the migration and winter habitat of these particular subspecies, for unquestionably New Mexico is far beyond the normal winter range of *oreganus*. In one place the statement is made that "it is easy to realize that the naming of winter specimens taken perhaps far from their breeding range involves careful matching and measuring of skins and, in a good many doubtful cases, merely clever guessing at the name most applicable." As the type specimen of *shufeldti* may be admitted to be one of the "doubtful" cases it is questionable if the substitution of the name *cousesi* on the above basis will be at once accepted as a final settlement of the *conectens-shufeldti* problem.

Under *Junco oregonus* (pp. 293-294) there is a discussion of certain nomenclatural principles (applied in particular to the classification of a large series of breeding birds from Eldorado County, California), in which the author clearly states his attitude toward the naming of individual specimens. In the series in question, taken well within the range of *Junco o. thurberi*, certain percentages are declared to be indistinguishable from *oreganus* and *cousesi*. As the conclusion of a discussion "whether the name we are using applies to the bird or to the locality," the statement is made that "I do not see how we can escape the necessity of calling a specimen *oreganus* or *thurberi*, or any other name, if it shows the characters of the form, no matter where it is taken. We must name a bird by the plumage it is wearing not by the one that it ought to be wearing because it has been captured within the bounds assigned to another geographical race." There is room for argument here (personally the reviewer does not agree with the statement made), and apparently in the case in question the author has not had the courage of his convictions to quite a sufficient degree to follow them to a logical conclusion, for the ranges of *oreganus* and *cousesi* are not defined by him so as to include the point from which these specimens were collected.

In the *Junco oregonus* group the range of *cousesi* is given as including Vancouver Island. On the map (page 304) showing the distribution of species and subspecies, the dividing line between *oreganus* and *cousesi* crosses the center of Vancouver Island, an impossible line of demarcation. (Incidentally it may be pointed out that there is no explanatory caption attached to this map, and that the labels affixed to the ranges of *cousesi*, *thurberi* and *pinosus* [3b, 3c, 3d] do not correspond with the lettering used on page 292, which is again different from that near the head of page 291.) Extensive se-

ries of juncos in the California Museum of Vertebrate Zoology from Alaska, Vancouver Island, California and Arizona do not bear out the idea of a race on Vancouver Island different from the Alaska bird and wintering in Arizona.

After the protest in the introduction that ornithology is "suffering from an indigestion of names," the genus *Junco* in particular having endured much from the prevalent "tendency hastily to apply names to every sort of variation, letting the facts catch up with the names as best they may," it is a little surprising to find farther on in the paper not only the description of "*Junco oregonus couesi*" (which seems to require some additional support beside that here given it) but also the terms "*cismontanus*" and "*transmontanus*" (page 295), casually introduced but applied to recognizable birds from specified localities, and hence certainly to be taken into consideration in any study of the nomenclature of the juncos of the regions involved!

The foregoing comments are all made from the point of view of one turning to this paper partly to obtain specific information, partly from a feeling of interest in the author's viewpoint, and finding, as above specified, various points open to discussion. Of the excellence of the contribution from a philosophic standpoint it is hardly necessary to speak, but a quotation from a review by Edgar Allan Poe on a quite different sort of publication may be taken as expressing the present reviewer's attitude: that excellence "is not excellence if it need to be demonstrated as such. To point out too particularly the beauties of a work, is to admit, tacitly, that these beauties are not wholly admirable. Regarding, then, excellence as that which is capable of self-manifestation, it but remains for the critic to show when, where, and how it fails in becoming manifest; and, in this showing, it will be the fault of the book itself if what of beauty it contains be not, at least, placed in the fairest light."—H. S. SWARTH.

CATALOGUE | OF | BIRDS OF THE AMERICAS AND THE ADJACENT ISLANDS | IN FIELD MUSEUM OF NATURAL HISTORY | (six lines) | By | CHARLES B. CORY | CURATOR OF DEPARTMENT OF ZOOLOGY. | Part II, no. 1, March, 1918, pp. 1-315, 1 plate (colored).

When completed this work will supply bird students for the first time with a complete catalogue in check-list form of the birds of the western hemisphere. The species are listed in the following manner: Scientific name first, with authority, followed by the English name; citations, the original description with the type locality, and of a few of the more important references—to works of monographic character, with colored plates, or with important distributional or nomenclatural subject-matter; ge-

ographic range of the form, concisely stated; the number of specimens in the Field Museum, with the localities represented. An asterisk preceding a species name indicates its representation in the Museum collection (needlessly it would seem, since the specimens are listed), and a dagger preceding the number of specimens indicates that some are available for exchange.

Descriptions are given of such species and subspecies as are not included in Ridgway's "Birds of North and Middle America" and the "Catalogue of Birds of the British Museum". This is one reason for the publication of Part II prior to Part I, which will await the completion of Ridgway's work, thereby covering forms already described by the latter, and avoiding duplication of labors.

In the present volume the birds of special interest to ornithologists of North America are the owls, kingfishers, goatsuckers, and hummingbirds. Recent studies are given liberal recognition, and many forms denied by the A. O. U. Committee, or else not passed upon by that body, are listed with brief comment upon their status. In this connection attention may be called to the remarks about *Cryptoglaux acadica brooksi* (page 37, footnote) as common-sense comment upon a previously muddled situation.

The ranges of the hummingbirds of western North America as given are not quite so shaky as in the A. O. U. *Check-List*, but the author "hedges" by not differentiating between breeding range and distribution at other seasons, lumping all under general statements. It is in just the manner in which this discrimination is made that the A. O. U. *Check-List* is so largely at fault. Of minor errors of the kind that seem bound to creep into a book of this nature, attention may be called to the following, as pertaining to western birds: On page 297, San Bernardino is misspelled twice in different ways, and Santa Margarita Island is wrongly described as adjacent to the coast of southern California. On page 29 the name *bendirei* is consistently misspelled on each of the several occasions on which it is used, and on page 44 *hoskinsii* is similarly misspelled. On page 129 Marin County is misspelled in giving the type locality of *Phalaenoptilus nuttalli californicus*. These blunders are not apt to give any trouble to Californian ornithologists, but misspelled locality names are frequently bothersome to students at a distance, investigating a region with which they are not familiar.

To bring together and to systematize the data necessary to a work as comprehensive as this "Catalogue" is an undertaking of no small dimensions, and ornithologists have occasion for gratitude to the author compiling such a hand-book, as well as to the institution that sponsors it.—H. S. SWARTH.

#### MINUTES OF COOPER CLUB MEETINGS

##### NORTHERN DIVISION

JANUARY.—The regular meeting of the Northern Division of the Cooper Club was held at the Museum of Vertebrate Zoology, Berkeley, on the evening of January 17, 1918, at eight o'clock. Dr. Evermann was in the chair. There was an attendance of 43, the following members being present: Messrs. Bryant, Carriger, Davis, Dr. Davis, Dixon, Evermann, Grinnell, Hansen, Kibbe, Lastreto, Snyder, Swarth, van Straaten, and Wheeler; Mesdames Allen, Bamford, Ferguson, Grinnell, Gunn, Kluegel, Knappen, Meade, Parsons, Randolph and Schlesinger. Among the visitors were Mrs. Evermann, Miss Ferguson, Mrs. Wheeler, Mr. Meade and Mr. Schlesinger.

The minutes of the December meeting were read and approved and Mr. van Straaten was elected to membership in the club. Dr. R. M. Leggett, 607 Butler Bldg., San Francisco, was proposed for membership by Mr. Harold Hansen, and Mr. Adrey Borell, Route H, Box 31, Fresno, by Mr. J. Grinnell. The resignation of Mrs. Margaret Boardman was accepted.

A motion was carried that nominees for office for the coming year be elected by acclamation. Mr. Lastreto presided, while the club elected Dr. Barton W. Evermann, president, Prof. J. O. Snyder, vice-president, Mrs. A. S. Allen, secretary, and Mr. A. S. Kibbe, representative on the committee for the conservation of wild life.

Prof. J. O. Snyder then spoke on the "collecting of birds' eggs and the training of a naturalist", making a plea for the protection of the divine spark in the small boy, training him in proper methods of collecting material and tabulating information. After some discussion the club adjourned.—AMELIA S. ALLEN, Secretary.

FEBRUARY.—The regular meeting of the Northern Division of the Cooper Club was held at the Museum of Vertebrate Zoology, February 21, at 8 P. M. As both the president and vice-president were absent Mr. Lastreto was asked to preside. The following members were present: Messrs. Anderson, Bryant, Cooper, Dixon, Grinnell, Hansen, Kibbe, Leggett, Lastreto, van Straaten, Swarth, Wheeler; Mesdames Allen, Bamford, Davidson, Ferguson, Grant, Grinnell, Gunn, Head, Knappen, Kibbe, Lombardi, Parsons. Visitors: Messrs. Austin, Hunt, Lombardi, Miss Ferguson, Miss Griffith, Mrs. Gunn, and Mrs. Wheeler.

The minutes of the January meeting were read and approved and those for the November, December, and January meetings of the Southern Division were read. Mr. Adrey Borell and Dr. Leggett, whose names were proposed at the last meeting were elected to membership as also the list of persons forwarded by the Southern Division, submitted for approval.

On recommendation of the executive committees of the two Divisions, Mr. Grinnell and Mr. Swarth were re-elected editors of *THE CONDOR*, and Messrs. Chambers and Law, business managers.

Dr. Bryant then entertained the club with a very interesting account of "the birds of Glacier Park." Adjourned.—AMELIA S. ALLEN, *Secretary*.

APRIL.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology of the University of California, Berkeley, April 18 at 8 p. m. Dr. Evermann was in the chair and the following members were present: Messrs. Cooper, Davis, Grinnell, Klibbe, Lastreto, Loomis, Trenor; Madames Allen, Bamford, Ferguson, Grinnell, Gunn, Head, Klibbe, Kluegel, Knappen, Meade, Schlesinger. Visitors present were Mr. Austin, Mrs. Evermann, Miss Ferguson, Mr. Meade, and Mr. Schlesinger.

The minutes of the February meeting of the Northern Division were read and approved. (The March meeting was omitted because of the crowded program of Semicentennial week at the University.) The minutes of the Southern Division meeting held in February were also read. The name of Frederick Alexander Schneider, San Jose, was proposed by H. S. Swarth, and the names proposed at the Southern Division meetings in November, December and January (fifteen in all) were approved. The resignation of Dr. Gibbons was read but was laid on the table as it seemed advisable that the club establish an absente list and remit the dues of members entering the army. On motion of Mr. Lastreto, the matter was referred to a committee consisting of the President and one other member to be appointed by the President to report at the May meeting. The Business Manager's report was read by Mr. Grinnell and heartily commended by the club. It was decided that the May meeting of the club should be held at the home of the Secretary on Sunday afternoon, May 19.

Miss Elizabeth Ferguson then gave an interesting account of the pollination of flowers by hummingbirds. Following the discus-

sion and an examination of the specimens of hummingbirds exhibited, the club adjourned.

—AMELIA S. ALLEN, *Secretary*.

#### SOUTHERN DIVISION

JANUARY.—Regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held January 31, 1918, at the Museum of History, Science and Art. President Miller officiated, with the following members present: Messrs. Appleton, Bishop, Brown, Calder, Chambers, Daggett, Enoch, Esterly, Hanford, Holland, Howard, Lamm, Law, Reis, Rich, Shepardson, Trenor, Willett and Wyman; and Mrs. Law. Five visitors were present, among them Volney Enoch, Mrs. Howard, and Miss Winters.

Minutes of the December meeting were read and approved, followed by reading of the minutes of the Northern Division for the previous three months. Four persons whose names were presented at the December meeting were elected to membership. New names presented were: Miss Illo Winters, R. 2, Box 53, Anaheim, by James A. Calder; Arthur Herbert Norton, 22 Elm St., Portland, Maine, and E. W. Hadler, Painesville, Ohio, by W. Lee Chambers; T. Boyer, Continental National Bank, and J. Walcott Thompson, 527 East First South St., Salt Lake City, by A. O. Treganza; also two names from the Northern Division.

In response to a communication from the Northern Division, it was voted that the Cooper Club should be represented in conjunction with the Western Society of Naturalists at the meeting of the Pacific Division of the Association for the Advancement of Science. A formal canvass of the members disclosed no one who wished to participate in the program at that meeting.

Election of officers for the coming year then followed. Dr. L. H. Miller was nominated for re-election as president, by Mr. Willett; Mr. Law nominated Mr. Willett for vice-president; and Mr. Shepardson nominated Mr. Wyman for re-election as secretary. All nominations were promptly voted closed; and on motion by Mr. Law, the secretary was instructed to cast an electing ballot for nominees.

Formal business ended, various members spoke briefly on recent collecting experiences. Mr. Willett reported having taken three Heermann Gulls lately (in addition to one taken some years ago), with white primary coverts, and showed photos of same. Dr. Bishop exhibited some interesting thrushes and song sparrows. His experience indicates that the Dwarf Hermit Thrush keeps to thick brush well up the canyons,

while the Alaska species favors more open places, generally on more level ground.

Inspection of a tray of hummingbirds, swifts, and goatsuckers, and discussion of the same, proved an interesting feature of the meeting. Adjourned.—L. E. WYMAN, *Secretary*.

FEBRUARY.—Regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at 8 p. m., February 28, at the Museum of History, Science and Art. Vice-president Willett was in the chair, with the following members present: Messrs. Appleton, Bishop, Brown, Brouse, Chambers, Enoch, Esterly, Hanford, Holland, Howell, Law, Little, Morcom, Reis, Rich, Shepardson, Stormont, Tallman and Wyman; and Mrs. Law, Mrs. Howell, Mr. Webber, and Master George Willett were visitors.

Minutes of the January meeting were read and approved. Miss Iilo A. Winters, Arthur Herbert Norton, T. Boyer, J. Walcott Thompson, and E. W. Hadler, were elected to membership; also, H. van Straaten, and Miss Edna B. Billings, whose names were received from the Northern Division. New names presented for membership were: Edmund Silliman, Salinas, and Willard Hill, Wasco, Kern Co., Calif., by O. P. Silliman; W. B. Johnstone, Edgewood, B. C., by J. A. Munro; W. D. Richardson, 4215 Prairie Ave., Chicago, Emerson A. Stoner, Box 444, Benicia, Calif., and Frank C. Evans, Crawfordsville, Ind., by W. Lee Chambers.

On motion by Dr. Rich, the members approved the action of the executive committee in re-appointing Messrs. Grinnell and Swarth as editors of *THE CONDOR*, and Messrs. Law and Chambers as business managers, for the ensuing year.

Business Manager's report for 1917 was submitted and explained by Mr. Law. On motion by Mr. Shepardson the report, which showed unexpectedly gratifying financial conditions, was accepted, and a vote of thanks tendered to Messrs. Law and Chambers for their able work in behalf of the Club.

There followed an hour of general discussion and inspection of a series of horned larks and flycatchers. Adjourned.—L. E. WYMAN, *Secretary*.

MARCH.—Regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Museum of History, Science and Art, March 28, at 8:00 p. m. In the absence of President and Vice-president, Mr. H. M. Holland was acclaimed Chairman. Other members present were: Messrs. Bishop, Brouse, Daggett, Esterly, Hanford,

Little, Nokes, Reis, Rich and Stormont. Minutes of the February meeting were read and approved, and the candidates whose names were presented at that meeting were duly elected to membership.

Dr. Bishop exhibited a number of recently taken specimens of Rufus and Allen Hummingbirds, showing the similarities of the two species, and gave an interesting talk on them. A considerable series of study skins of Jays, Crows and Red-wings was inspected and discussed. Adjourned.—W. LEE CHAMBERS, *Secretary pro tem.*

APRIL.—Regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Museum of History, Science and Art, April 25, at 8:00 p. m. President Miller officiated, with the following members present: Messrs. Bishop, Brown, Chambers, Colburn, Daggett, Esterly, Hanford, Holland, Howell, Law, Little, Nokes, Reis, Robertson, Shepardson, Stormont, Wyman, and Mrs. Law. Mrs. Bishop and Mrs. Howell were visitors.

Minutes of the Northern Division were read. Names presented for membership were: Miss May T. Cooke, Washington, D. C., by T. S. Palmer; Donald A. Gilchrist, Flagstaff, Ariz., and Gorm Loftfield, Tucson, Ariz., by W. P. Taylor; Ralph Lawson, Salem, Mass.; G. Franklin Brown, Needham, Mass.; Stanley Clisby Arthur, New Orleans, La.; Lombard Carter Jones, M. D., Falmouth, Mass.; Gardner D. Stout, New York City; and Mrs. Jennie E. B. Webster, New York City, by W. Lee Chambers; John Zerlang and Lawrence Zerlang, Samoa, Humboldt Co., California, by John M. Davis; and Walter C. Henderson, Washington, D. C., by Robert W. Williams.

A letter from Dr. W. P. Taylor, of the Biological Survey, in regard to the status of the Heath Hen and the Martha's Vineyard Reservation, was read by Mr. Law, on whose motion, duly seconded and carried, the Secretary was instructed to write the Chairman of the Massachusetts Fish and Game Commission for information on the subject. Mr. Chambers invited the members to hold the May meeting at his home in Eagle Rock. The invitation was quickly accepted.

In the general discussion that followed the business meeting various members told of recent collecting experiences. Mr. Howell found the Yuma Horned Lark at Mecca in March, but Dr. Bishop was unable to include it in a list of forty-two species found a month later at Thermal, which station is supposed to be well within the range limit of this lark. Mr. Wyman recorded the same

number of species observed during a five-day stay at Palm Springs in April. A series of meadow-larks, orioles and crossbills was on the table for general discussion and study. Adjourned.—L. E. WYMAN, *Secretary.*

#### SAN BERNARDINO CHAPTER

After a vacation of some months the meetings of the San Bernardino Valley Chapter began again, the first meeting of the season being held at the home of Mr. Hanna, Colton, November 20, 1917. The subject for study was "Jays", and skins and eggs of several species were displayed. Wright M. Pierce, Judge Wall, Wilson Hanna and French Gilman displayed a number of skins, and H. Arden Edwards showed fine sets of eggs of many species, including some of the European Jay. French Gilman led the discussion of the various jays in California and the United States, which was followed by a general exchange of experiences. Full justice was then done to the refreshments served by Mrs. Hanna. Those present were: Judge Wall, R. B. Herron, Wright M. Pierce, H. Arden Edwards, E. D. Palmer, A. F. Gilman, C. Mabel Gilman, Sarah E. Gilman, M. French Gilman, C. G. Wiggins, Judge Hanna, Mrs. J. B. Hanna, Wilson C. Hanna, and Mrs. Wilson C. Hanna.

The second meeting was held December 18, at the home of Judge J. B. Hanna at Colton. At this meeting the subject of ducks was taken up, and eggs and skins were in evidence. This proved a popular topic, and even the more lukewarm enthusiasts sat up and took notice. M. French Gilman gave the results of a recent visit to Salton Sea to investigate the rumors of dead ducks along the shores of the sea. He reported that in following the water-line for 330 feet he found 185 dead ducks, 5 Coots, 2 Florida Gallinules, 4 Eared Grebes, 1 cormorant, 2 Killdeers, and 1 small sandpiper.

A meeting was held January 20, at the home of H. Arden Edwards at Claremont. The attendance was not as large as it should have been; for the sight of Mr. Edwards's collection of eggs and nests was worth going far to see. A real "norther" kept some of the people at home, but those present were glad they had braved the wind. Visitors present were George Willett and C. D. Hegner, of Los Angeles. Refreshments served by Mrs. Edwards rounded out a most enjoyable meeting.—M. FRENCH GILMAN, *Secretary.*

MARCH.—The regular meeting was held March 17 at the home of M. French Gilman, Banning, California. The subject of grouse,

and partridges was taken up and specimens of several kinds were shown. A case containing a group of Valley Quails mounted by R. B. Herron of Urbita, California, excited much admiration.

Present were the following members and visitors: Wilson C. Hanna, Mr. and Mrs. J. B. Hanna and Mrs. A. L. Hubrich, all of Colton; Judge Edward Wall, E. D. Palmer, Clifford Smith and W. D. La Niece, of San Bernardino; R. B. Herron, Urbita; Mr. and Mrs. H. A. Edwards and Mr. and Mrs. C. D. Hegner of Claremont; R. Bruce Findlay and Dr. F. D. West of Beaumont; A. F. Beal of Long Beach; Mrs. C. M. Boss and Miss Mary A. Boss of Duluth, Minn. In view of the fact that some of the members were expecting to be in the field much of the time it was decided not to hold any more meetings until next fall.—M. FRENCH GILMAN, *Secretary.*

#### DIRECTORY OF MEMBERS OF THE COOPER ORNITHOLOGICAL CLUB

Revised to May 1, 1918

(Residence in California unless otherwise stated. Year following address indicates date of election; year in parenthesis indicates date honorary member joined the Club. Star preceding name indicates life member.)

#### HONORARY MEMBERS

Allen, Dr. J. A., Amer. Museum Nat. Hist., New York, N. Y. 1910.  
 Henshaw, H. W., Biol. Survey, Washington, D. C. 1909.  
 Merriam, Dr. C. Hart, 1919 16th St., Washington, D. C. 1909.  
 Nelson, E. W., Biol. Survey, Washington, D. C. (1904) 1917.  
 Ridgway, Robert, 3306 New Hampshire Ave., N. W., Washington, D. C. 1905.  
 Stephens, Frank, 3746 Park Blvd., San Diego. (1894) 1912.

#### ACTIVE MEMBERS.

Alexander, Miss Annie M., 92 Seaview Ave., Piedmont. 1908.  
 Allen, Mrs. Amelia S., 37 Mosswood Road, Berkeley. 1913.  
 Allen, A. A., McGraw Hall, Ithaca, N. Y. 1911.  
 Anderson, Ernest M., 2524 Asquith St., Victoria, B. C., Canada. 1915.  
 Anderson, Malcolm P., 2721 Buena Vista Ave., Alameda. 1901.  
 Anderson, Dr. Rudolph M., Biol. Div., Geol. Survey, Ottawa, Ont., Canada. 1916.

Appleton, J. S., Simi, Ventura Co. 1901.  
 Armstrong, Edward E., 207 N. Michigan Ave., Chicago, Ill. 1914.  
 Arnold, E., Grand Trunk Ry., Montreal, Que., Canada. 1909.  
 Arnold, Dr. Ralph, 825 Union Oil Bldg., Los Angeles. 1893.  
 Arnold, Dr. W. W., 504 N. Nevada Ave., Colorado Springs, Colo. 1911.  
 Arthur, Stanley Clisby, Dept. of Conservation, New Orleans, La. 1918.  
 Atkinson, W. L., 35 Hawthorne Way, San Jose. 1901.  
 Atsatt, Miss Sarah R., 345 S. Serrano Ave., Los Angeles. 1911.  
 Averill, E. F., Pendleton, Ore. 1914.  
 Badé, Wm. F., 2223 Atherton St., Berkeley, 1903.  
 Badger, M. C., Santa Paula. 1915.  
 Bailey, Alfred M., Louisiana State Museum, New Orleans, La. 1917.  
 Bailey, Bernard, R.D. 1, Box 97, Elk River, Minn. 1911.  
 Bailey, Florence M. (Mrs. Vernon), 1834 Kalorama Road, Washington, D. C. 1910.  
 Bailey, H. H., 319 54th St., Newport News, Va. 1903.  
 Bailey, Vernon, 1834 Kalorama Road, Washington, D. C. 1904.  
 Bales, Dr. B. R., 149 W. Main St., Circleville, Ohio. 1906.  
 Bamford, Mrs. G. L., 1428 Castro St., Oakland. 1918.  
 Bangs, Outram, Museum Comp. Zool., Cambridge, Mass. 1906.  
 Barker, Fred, Parkers Prairie, Minn. 1914.  
 Barnes, Claude T., 359 10th Ave., Salt Lake City, Utah. 1915.  
 Barnes, R. Magoon, Lacon, Ill. 1908.  
 Barrows, Prof. Walter B., Box 183, East Lansing, Mich. 1909.  
 Batchelder, Chas. F., 7 Kirkland St., Cambridge, Mass. 1910.  
 Beck, Rollo H., R.D. 21, San Jose. 1894.  
 Bennett, R. H., 246 Southern Pacific Bldg., San Francisco. 1909.  
 Bent, A. C., Taunton, Mass. 1909.  
 Benton, Ralph, 2074 W. 27th St., Los Angeles. 1915.  
 Benton, Thos. H., Jr., 2821 Van Buren St., Alameda. 1916.  
 Bergtold, Dr. W. H., 910 Metropolitan Bldg., Denver, Colo. 1917.  
 Bicknell, Mrs. F. T., 319 S. Normandie Ave., Los Angeles. 1913.  
 Bigelow, Homer L., Old Orchard Road, Chestnut Hill, Mass. 1910.  
 Billings, Miss Edna B., Harrington, Wash. 1918.  
 Bishop, Dr. Louis B., 365 Orange St., New Haven, Conn. 1904.  
 Blain, Merrill W., 727 Jefferson Ave., Detroit, Mich. 1909.  
 Blake, Mrs. Edwin T., 2843 Steiner St., San Francisco. 1917.  
 Blayne, Nita A., 920 O St., Fresno. 1911.  
 Bliss, John D., Pozo, San Luis Obispo Co. 1916.  
 Boardman, Mrs. Margaret S., 3022 Clay St., San Francisco. 1916.  
 Boeck, Wm. C., East Hall, Univ. Cal., Berkeley. 1917.  
 Boeing, W. E., 1100 Hoge Bldg., Seattle, Wash. 1914.  
 Bolander, L. Ph., Jr., 2517 21st Ave., E. Oakland. 1907.  
 Bolt, B. F., 1421 Prospect Ave., Kansas City, Mo. 1916.  
 Borell, Adrey E., R.D. 11, Box 31, Fresno. 1918.  
 Bowdish, B. S., Demarest, N. J. 1910.  
 Bowditch, Miss Charlotte, 2227 Upper Garden St., Santa Barbara. 1914.  
 Bowles, J. H., The Woodstock, Tacoma, Wash. 1903.  
 Boyer, T., Cont'l. Nat'l. Bank, Salt Lake City, Utah. 1918.  
 Boyle, Ashby D., 351 5th Ave., Salt Lake City, Utah. 1915.  
 \*Bradbury, W. C., 1440 Race St., Denver, Colo. 1913.  
 Braislin, Dr. William C., 425 Clinton Ave., Brooklyn, N. Y. 1910.  
 Brandt, H. W., 2025 E. 88th St., Cleveland, Ohio. 1914.  
 Brewster, Wm., 145 Brattle St., Cambridge, Mass. 1904.  
 Brooks, Major Allan, Okanagan Landing, B. C., Canada. 1906.  
 Brooks, L., Box 539, New Bedford, Mass. 1913.  
 Brouse, W. A., 3623 5th Ave., Los Angeles. 1916.  
 Brown, D. E., 2542 Beacon Ave., Seattle, Wash. 1909.  
 Brown, Edward J., 1609 S. Van Ness Ave., Los Angeles. 1915.  
 Brown, G. Franklin, Needham, Mass. 1918.  
 Brown, Mrs. Herbert, 434 E. 2d St., Tucson, Ariz. 1914.  
 Brown, W. W., Jr., Long Beach. 1909.  
 Bryant, Dr. Harold C., Museum Vert. Zool., Berkeley. 1910.  
 Burleigh, Dr. Thos. D., 825 N. Negley Ave., Pittsburgh, Pa. 1918.  
 Burnett, W. L., State Agr. Coll., Fort Collins, Colo. 1910.  
 Burnham, Dr. Clark, Bushnell Place, Berkeley. 1907.  
 Burns, Frank L., Berwyn, Pa. 1909.

Burtsch, Verdi, Branchport, N. Y. 1910.  
 Buturlin, Sergius A., Wessenberg, Estonia, Russia. 1909.  
 Caduc, E. E., 512 Massachusetts Ave., Boston, Mass. 1911.  
 Calder, James A., Buena Park. 1917.  
 Camp, Chas. L., Livingston Hall, Columbia Univ., New York, N. Y. 1909.  
 Cantwell, George G., Puyallup, Wash. 1915.  
 Carpenter, N. K., Box 127, Escondido. 1901.  
 Carriger, H. W., 5185 Trask Ave., Oakland. 1895.  
 Carricker, M. A., Jr., Cincinnati Coffee Co., Santa Marta, Colombia, S. A. 1911.  
 Case, Rev. Bert F., Tolland, Conn. 1913.  
 Case, C. M., 306 Blue Hills Ave., Hartford, Conn. 1911.  
 Chamberlain, C. W., 36 Lincoln St., Boston, Mass. 1912.  
 Chambers, W. Lee, Eagle Rock. 1897.  
 Chapman, Frank M., Amer. Museum Nat. Hist., New York, N. Y. 1903.  
 \*Childs, John Lewis, Floral Park, N. Y. 1904.  
 Clark, Josiah H., 238 Broadway, Patterson, N. J. 1910.  
 Clay, C. Irvin, Box 353, Eureka. 1910.  
 Clifton, H. T., 509 E. Walnut St., Pasadena. 1904.  
 Coale, Henry K., Highland Park, Ill. 1907.  
 Coffin, Sherwood, 35 2d St., San Francisco. 1911.  
 Coggins, Herbert L., 2929 Piedmont Ave., Berkeley. 1910.  
 Cohen, Donald A., 2618 Lincoln St., Alameda. 1901.  
 \*Colburn, A. E., 806 S. Broadway, Los Angeles. 1905.  
 Cole, Mrs. A. H., 2827 Hillegass Ave., Berkeley. 1917.  
 Conger, Dorothy, Recreation, Ore. 1914.  
 Cookman, Alfred, 1340 Exposition Blvd., Los Angeles. 1912.  
 Cooper, J. S., 827 54th St., Oakland. 1903.  
 Cox, H. E., Redondo Hardware Co., Redondo. 1916.  
 Crane, Ada Ethel, R.D. 1, Box 229, Penryn. 1914.  
 Craven, Jesse T., 811 Roosevelt Ave., Detroit, Mich. 1909.  
 Crosby, Maunsell S., Grasmere Farms, Rhinebeck, N. Y. 1911.  
 Culver, Susan B., 2423 Prospect St., Berkeley. 1914.  
 Cummings, Byron, Univ. Ariz., Tucson, Ariz. 1916.  
 Currier, Ed. S., 416 E. Chicago St., St. Johns Sta., Portland, Ore. 1904.  
 Daggett, Frank S., Museum Hist., Sci., and Art, Los Angeles. 1895.  
 Daniels, H. W., 312 Mountain Ave., Piedmont. 1916.  
 Davenport, Mrs. Elizabeth B., Northern Ave., Brattleboro, Vt. 1911.  
 Davidson, Cassie A., 1525 Le Roy Ave., Berkeley. 1915.  
 Davidson, Pirie, East Hall, Univ. Cal., Berkeley. 1916.  
 Davis, Benjamin J., 2525 Piedmont Ave., Berkeley. 1916.  
 Davis, Dr. Fred B., 401 Vernon St., Oakland. 1916.  
 Davis, J. M., 811 O St., Eureka. 1908.  
 \*Dawson, W. Leon, R.D. 3, Box 83, Santa Barbara. 1906.  
 Day, Chester S., 1711 Commonwealth Ave., Boston, Mass. 1910.  
 Dean, W. F., Three Rivers. 1901.  
 Deane, Ruthven, 112 W. Adams St., Chicago, Ill. 1904.  
 Deane, Walter, 29 Brewster St., Cambridge, Mass. 1907.  
 Dear, Lionel S., Box 456, Ft. William, Ont., Canada. 1914.  
 Dearborn, Ned, Linden, Md. 1909.  
 DeGroat, Dudley S., Box 231, Redwood City. 1916.  
 Dice, Dr. Lee R., Univ. Mont., Missoula, Mont. 1914.  
 \*Dickey, Donald R., San Rafael Heights, Pasadena. 1910.  
 Dickinson, A. B., 1510 Girard St., Los Angeles. 1916.  
 Dille, F. M., Valentine, Neb. 1903.  
 Dixon, Joseph, Museum Vert. Zool., Berkeley. 1904.  
 Dodge, Laura I., 3031 Elliot St., Long Beach. 1915.  
 Dodge, Ralph E., 546 Bay St., Santa Cruz. 1915.  
 Doolittle, E. A., Box 44, Painesville, Ohio. 1917.  
 Drachman, Myra, 3031 Elliot St., Long Beach. 1915.  
 DuBois, Alexander Dawes, Dutton, Mont. 1911.  
 Dunbar, W. Linfred, 118 Freeman Ave., Stratford, Conn. 1911.  
 Duprey, H. F., Dixon. 1907.  
 Durfee, Owen, Box 125, Fall River, Mass. 1911.  
 Dutcher, William, 949 Park Ave., Plainfield, N. J. 1905.  
 Dwight, Dr. Jonathan, Jr., 134 W. 71st St., New York, N. Y. 1904.  
 Eastman, Capt. F. B., Box 653, Fort Leavenworth, Kan. 1904.  
 Eaton, S. Harrison, Box 653, Lawrenceville, Ill. 1916.

Edson, J. M., Marietta Road, Bellingham, Wash. 1911.

Edwards, H. Arden, Box 312, Claremont. 1913.

Eggleson, Prof. Julius W., 239 William St., New London, Conn. 1913.

Elliott, Mrs. Foster, 178 S. Serrano St., Los Angeles. 1917.

Elliott, Roland, Grand Meadow, Minn. 1913.

Enoch, V. A., 2700 Darwin Ave., Los Angeles. 1918.

Enoch, Wade L., 2700 Darwin Ave., Los Angeles. 1915.

Esterly, Dr. C. O., Occidental College, Los Angeles. 1908.

Evans, Frank C., Crawfordsville, Ind. 1918.

Evans, J. Harold, R.D. 5, Box 236, Santa Rosa. 1917.

Evermann, Dr. Barton W., Cal. Acad. Sciences, San Francisco. 1911.

Falger, Annie M. (Mrs. Wm.), Modesto. 1917.

Fargo, Mrs. Minerva J., 1632 N. Kingsley Drive, Los Angeles. 1914.

Felton, Mrs. C. N., Menlo Park. 1916.

Ferguson, Mrs. Mary Van E., 5 Panoramic Way, Berkeley. 1915.

Field, Mrs. Chas. A., 534 27th St., Oakland. 1916.

Finley, Wm. L., 651 E. Madison St., Portland, Ore. 1900.

Fischer, E. J., 525 W. 57th St., Los Angeles. 1910.

Fish, Mrs. Frances Webster, 2325 Piedmont Ave., Berkeley. 1917.

Fisher, Dr. A. K., Biol. Survey, Washington, D. C. 1904.

Fisher, Miss Elizabeth W., 2222 Spruce St., Philadelphia, Pa. 1910.

Fisher, Walter K., 1525 Waverly St., Palo Alto. 1900.

Fitzpatrick, T. J., Bethany, Neb. 1913.

Flanagan, John H., 89 Power St., Providence, R. I. 1904.

Fleming, J. H., 267 Rusholme Road, Toronto, Ont., Canada. 1910.

Flint, Wm. R., 244 N. Madison Ave., Pasadena. 1912.

Forbush, E. H., State House, Boston, Mass. 1916.

Ford, Prof. W. A., Box 23, Umatilla, Ore. 1915.

Fordyce, Geo. L., 40 Lincoln Ave., Youngstown, Ohio. 1916.

Forrest, Earle R., 261 Locust Ave., Washington, Pa. 1910.

Fortner, John C., Brawley. 1910.

Fowler, Frederick H., 221 Kingsley Ave., Palo Alto. 1901.

French, Mrs. A. J., R.D. 1, Carleton, Ore. 1917.

French, James G., The Menagerie, Maywood, Victoria, B. C., Canada. 1918.

Fuertes, Louis A., Cornell Heights, Ithaca, N. Y. 1904.

Gartrell, Geo. N., Summerland, B. C., Canada. 1917.

Gault, Benj. T., Glen Ellyn, Ill. 1905.

Gay, Harold S., 200 S. Wilson Ave., Alhambra. 1901.

Gay, Mrs. Sophie E., Red Bluff. 1916.

Germain, Miss Claire, 3906 W. 1st St., Los Angeles. 1915.

Gifford, Dr. Harold, 420 S. 38th St., Omaha, Neb. 1916.

Giles, Roscoe I., 82 Newton St., Marlborough, Mass. 1917.

Gilkey, Miss Helen, 562 Hobart St., Oakland. 1917.

Gilman, M. French, Banning. 1901.

Goeltz, Walter A., 1822 Judson Ave., Ravinia, Ill. 1915.

Goethe, C. M., Capital Natl. Bank Bldg., Sacramento. 1915.

Goldman, E. A., Biol. Survey, Washington, D. C. 1901.

Goldman, Luther J., Pocatello, Idaho. 1902.

Goodcell, Mrs. Marion L., 864 D St., San Bernardino. 1914.

Goodwin, Rev. S. H., Box 284, Provo, Utah. 1910.

Gosse, Capt. Philip, Savile Club, Piccadilly, London, England. 1917.

Gould, Joseph E., Box 96, Arcadia, Fla. 1909.

Grant, Mrs. Adele Lewis, 2641a Channing Way, Berkeley. 1915.

Grant, U. S., 4th, 43 Westmoreley Court, Cambridge, Mass. 1909.

Granville, Fred L., 945 Edgeware Road, Los Angeles. 1910.

Greenwood, Frederick, Fed'l Res. Bank, Spokane, Wash. 1918.

Grey, Henry, R.D. 2, Box 154A, San Diego. 1901.

Grinnell, Geo. Bird, 238 E. 15th St., New York, N. Y. 1914.

Grinnell, Hilda Wood, 2811 College Ave., Berkeley. 1912.

Grinnell, Dr. Joseph, Museum Vert. Zool., Berkeley. 1894.

Gulon, Geo. Seth, Napoleonville, La. 1911.

Gunn, Miss Amy E., 2828 Devisadco St., San Francisco. 1914.

Hadeler, E. W., Painesville, Ohio. 1918.

Hall, Mrs. Carlotta C., 1615 La Loma Ave., Berkeley. 1915.

Halladay, Daniel S., R.D. 3, Anaheim. 1910.

Hanaford, A. W., R.D. 9, Box 700, Los Angeles. 1917.

Hanford, Forrest, 3825 Division St., Oakland. 1912.

Hann, H. H., Parkdale, Ore. 1909.

Hanna, W. C., 1000 Pennsylvania Ave., Colton. 1902.

Hannibal, Edna A., Stanford University. 1915.

Hansen, Harold E., 870 43d Ave., San Francisco. 1916.

Harmon, Mrs. Frances M., 2115 Estrella Ave., Los Angeles. 1912.

Harris, Harry, Post Office, Kansas City, Mo. 1914.

Hartman, Paul J., 1118½ Maple Ave., Los Angeles. 1917.

Hathaway, H. S., Box 1466, Providence, R. I. 1912.

Havemeyer, Henry O., 129 Front St., New York, N. Y. 1917.

Head, Anna, 2533 Chilton Ave., Berkeley. 1912.

Hegner, Carl D., Box 312, Claremont. 1914.

Helneman, Olf. J., 1864 Grove St., San Francisco. 1908.

Heller, Edmund, Amer. Museum Nat. Hist., New York, N. Y. 1894.

Helme, Arthur H., Miller Place, Suffolk Co., N. Y. 1911.

Henderson, Junius, Box 398, Boulder, Colo. 1909.

Henderson, Walter C., Biol. Survey, Washington, D. C. 1918.

Hennessey, Frank Charles, 457 Albert St., Ottawa, Ont., Canada. 1917.

Henshaw, Judge F. W., 762 Mills Bldg., San Francisco. 1915.

Hersey, F. Seymour, 6 Maple Ave., Taunton, Mass. 1915.

Hersey, L. J., Wray, Colo. 1909.

Hill, Willard, Star Route, Wasco, Kern Co. 1918.

Hoag, Mrs. G. B., Elko, Nev. 1916.

Hodge, C. F., 125 Buffalo Ave., Takoma Park, D. C. 1914.

Holland, Harold M., 320 S. Gramercy Place, Los Angeles. 1901.

Holleman, Ridley, 215 Ogden St., San Antonio, Tex. 1917.

Holman, F. C., 558 Lincoln Ave., Palo Alto. 1914.

\*Hoover, Theodore J., 450 Melville Ave., Palo Alto. 1898.

Horsfall, R. Bruce, 1457 E. 18th St., Portland, Ore. 1914.

Horsfall, Mrs. R. Bruce, 1457 E. 18th St., Portland, Ore. 1916.

Howard, O. W., Box 484, Los Angeles. 1895.

\*Howell, A. B., Covina. 1908.

Howell, Arthur H., 2919 S. Dakota Ave., Washington, D. C. 1916.

Howell, B. F., Jr., 52 Patton Ave., Princeton, N. J. 1909.

Howes, Paul G., 91 Hope St., Stamford, Conn. 1910.

Hubbard, S., 244 Montecito Ave., Oakland. 1912.

Huber, Wharton, Gwynedd Valley, Pa. 1915.

Hudson, L. W., Box 33, Orost. 1917.

\*Huey, Laurence, 32d St. and Clay Ave., San Diego. 1909.

Hunt, E. B., 603 R.R. Exch. Bldg., Milwaukee, Wis. 1914.

Hunter, J. S., Box 482, San Mateo. 1903.

Husher, Mrs. Gertrude H., 821 S. Hope St., Los Angeles. 1913.

Hussey, Roland F., 1308 E. Ann St., Ann Arbor, Mich. 1916.

Illingsworth, J. F., Gordonville, Cairns, N. Queensland. 1896.

Ingersoll, Albert M., 908 F. St., San Diego. 1895.

Isham, C. Bradley, 27 W. 67th St., New York, N. Y. 1909.

Jackson, Ralph W., R.D. 1, Cambridge, Md. 1917.

Jackson, Thos. H., 304 N. Franklin St., West Chester, Pa. 1911.

Jacobs, J. Warren, 404 S. Washington St., Waynesburg, Pa. 1909.

Jacobson, W. C., 2221 McKinley Ave., Berkeley. 1916.

Jay, Antonin, 1622 Pennsylvania Ave., Los Angeles. 1901.

Jenkins, Ida G., 30 Dearborn St., Roxbury, Mass. 1914.

Jennery, Chas. F., 100 Gordon Ave., Hyde Park, Mass. 1917.

Jessee, Dr. R. L., Philo, Ill. 1909.

Jesrun, Dr. Mortimer, 443 Emerson St., Palo Alto. 1916.

Jewett, R. D., 1238 S. Serrano Ave., Los Angeles. 1912.

Jewett, Stanley G., Pendleton, Ore. 1909.

Job, Herbert K., 291 Main St., West Haven, Conn. 1915.

Johnson, Frank Edgar, 16 Amackassin Terrace, Yonkers, N. Y. 1911.

Johnson, Harry V., 2625 Haste St., Berkeley. 1917.

Johnson, Dr. Myrtle E., National City. 1908.

Johnstone, W. B., Edgewood, B. C., Canada. 1918.

Jonas, Coloman, 1023 Broadway, Denver, Colo. 1910.

Jones, Dr. Lombard Carter, Falmouth, Mass. 1918.

Jones, Dr. Lynds, Museum Oberlin Coll., Oberlin, Ohio. 1911.

Jordan, A. H. B., Everett, Wash. 1911.  
 Jordan, Dr. David Starr, Stanford University. 1902.  
 Judson, W. B., 826 Washington Bldg., Los Angeles. 1894.  
 Kaeding, Geo. L., Battle Mountain, Nev. 1903.  
 Kelley, Mrs. Harriet P., Selma. 1917.  
 Kellogg, Miss Louise, Box 248, Suisun. 1911.  
 Kellogg, Ralph T., Silver City, N. M. 1916.  
 Kellogg, Prof. Vernon L., Stanford University. 1901.  
 Kendall, J. N., 253 Magnolia Ave., Long Beach. 1915.  
 \*Kennard, Frederic H., Dudley Road, Newton Centre, Mass. 1911.  
 Kennedy, Clarence H., Ent. Dept., Cornell Univ., Ithaca, N. Y. 1912.  
 Kermode, F., Provincial Museum, Victoria, B. C., Canada. 1911.  
 Keyes, Prof. Chas. R., Mt. Vernon, Iowa. 1900.  
 Kibbe, A. S., 1534 Grove St., Berkeley. 1917.  
 Kibbe, Bessie W. (Mrs. A. S.), 1534 Grove St., Berkeley. 1917.  
 Kimball, H. H., Long Beach. 1909.  
 Kirn, Albert J., R.D. 3, Paola, Kas. 1918.  
 Kitchin, E. A., 4014 N. 35th St., Tacoma, Wash. 1917.  
 Kittredge, Joseph, Jr., U. S. Forest Service, Missoula, Mont. 1915.  
 Kluegel, Mrs. Edward A., 2623 Le Conte Ave., Berkeley. 1916.  
 Knappen, Nellie C. (Mrs. T. M.), 2719 Woolsey St., Berkeley. 1916.  
 Knickerbocker, Chas. K., 445 N. Sacramento Ave., Carpenter Sta., Chicago, Ill. 1905.  
 Knowlton, Dr. F. H., U. S. Nat. Museum, Washington, D. C. 1910.  
 Kofoid, Prof. C. A., Zool. Dept., Univ. Cal., Berkeley. 1909.  
 Kohler, Louis S., 47 Wagner Place, Hawthorne, N. J. 1909.  
 Kretzman, Prof. P. E., Concordia College, 1230 St. Anthony Ave., St. Paul, Minn. 1914.  
 Kuser, John Dryden, Bernardsville, N. J. 1912.  
 Kuykendall, W. A., Eugene, Lane Co., Ore. 1916.  
 Labarthe, Jules, Hobart Bldg., San Francisco. 1914.  
 LaJeunesse, H. V., 1510 Everett St., Oakland. 1916.  
 Lamb, Chester C., 946 S. Broadway, Los Angeles. 1899.  
 Lancashire, Mrs. J. H., 7 E. 75th St., New York, N. Y. 1911.  
 Lane, Geo. W., Morgan Hill. 1914.  
 Lastreto, C. B., 260 California St., San Francisco. 1913.  
 \*Law, J. Eugene, 833½ S. Catalina St., Los Angeles. 1900.  
 Law, Laura Beatty (Mrs. J. E.), 833½ S. Catalina St., Los Angeles. 1915.  
 Lawson, Ralph, 88 Washington Square, Salem, Mass. 1918.  
 Layne, J. Gregg, 232 S. Spring St., Los Angeles. 1912.  
 Leach, Mrs. Eugene W., 736 Wisconsin St., Racine, Wis. 1917.  
 Leach, Frank A., 217 Hillside Ave., Piedmont. 1917.  
 Leggett, Dr. R. M., 607 Butler Bldg., San Francisco. 1918.  
 Lelande, H. J., Court House, Los Angeles. 1897.  
 Leopold, Aldo, 135 S. 14th St., Albuquerque, N. M. 1916.  
 Libby, Miss Gretchen L., 221 3d Ave., Santa Barbara. 1911.  
 Lien, Carl, Westport, Wash. 1917.  
 Ligon, J. Stokley, Box 131, Albuquerque, N. M. 1914.  
 Liliencrantz, H. T., Rancho Las Cimas, Hollister. 1916.  
 Lindsay, Dr. D. Moore, 808 Boston Bldg., Salt Lake City, Utah. 1915.  
 Lings, G. H., 208 Piermont Ave., Nyack, N. Y. 1913.  
 Litsey, Jno. B., Jr., 2611 May St., Fort Worth, Tex. 1911.  
 Little, Etta V., 143 S. Pickering Ave., Whittier. 1914.  
 Little, Luther, 519 Stimson Bldg., Los Angeles. 1914.  
 Littlejohn, Chase, Redwood City. 1901.  
 Loel, Mrs. Fred J., 17 S. 1st St., San Jose. 1917.  
 Lombardi, Ethel, 2331 Le Conte Ave., Berkeley. 1916.  
 Loomis, Leverett M., Cal. Acad. Sciences, San Francisco. 1902.  
 Loring, J. Alden, Owego, Tioga Co., N. Y. 1914.  
 Love, Chas. A., 3353 22d St., San Francisco. 1901.  
 Love, Guy, R.D. 5, Oberlin, Kan. 1913.  
 Luedemann, Miss Frieda, Box 105, Los Gatos. 1914.  
 Lund, Henry J., 526 Spencer Ave., San Jose. 1916.  
 Lusk, Richard D., Winkelman, Ariz. 1915.  
 Luther, Clarence H., 8 McIlroy Bldg., Fayetteville, Ark. 1909.  
 McAtee, W. L., Biol. Survey, Washington, D. C. 1907.  
 \*McGregor, R. C., Bureau of Science, Manila, P. I. 1893.

McLain, R. B., Box 132, Hollywood. 1897.  
 McLean, Donald D., Coulterville. 1916.  
 Madison, Harold L., Park Museum, Providence, R. I. 1917.  
 Magee, William A., Jr., R.D. Fruitvale, Box 433, Oakland. 1912.  
 Mailliard, Ernest C., 1815 Vallejo St., San Francisco. 1909.  
 Mailliard, John W., 230 California St., San Francisco. 1894.  
 Mailliard, Joseph, 1815 Vallejo St., San Francisco. 1895.  
 Marshall, Dr. Benj. M., 2036 D St., Eureka. 1913.  
 Martin, De Loach, 1223 S. Washington Ave., Marshall, Tex. 1916.  
 Martin, John W., State Hospital, Agnew. 1907.  
 Massey, Herbert, Ivy Lea, Burnage, Didsbury, Manchester, England. 1909.  
 Meade, Grace S. (Mrs. Calvert), 202 E. 12th St., Oakland. 1916.  
 Meeker, Jesse C. A., Box 161, Danbury, Conn. 1907.  
 Meister, H. D., Wauseon, Ohio. 1909.  
 Mershon, W. B., Saginaw, Mich. 1911.  
 Meyer, Miss Heloise, Overlee, Lenox, Mass. 1914.  
 Michael, Chas. W., 83 Sharon St., San Francisco. 1916.  
 Miller, Mrs. E. C. T., 1010 Euclid Ave., Cleveland, Ohio. 1914.  
 Miller, Miss Georgie V., 848 Gough St., San Francisco. 1915.  
 Miller, Dr. Loye Holmes, State Normal School, Los Angeles. 1905.  
 Miller, Mrs. Olive Thorne, 5928 Hayes Ave., Los Angeles. 1911.  
 Miller, W. De Witt, Amer. Museum Nat. Hist., New York, N. Y. 1909.  
 Mills, Enos A., Longs Peak, Estes Park, Colo. 1914.  
 Miner, Dr. H. N., Colfax, Placer Co. 1903.  
 Mitchell, H. H., Prov. Museum, Normal School, Regina, Sask., Canada. 1915.  
 Mitchell, Dr. Walton I., 603 Beacon Bldg., Wichita, Kan. 1909.  
 Moffitt, James, 1818 Broadway, San Francisco. 1917.  
 Moles, S. D., 157 W. 7th St., Claremont. 1915.  
 Moore, Chas. S., Box 222, San Diego. 1913.  
 Moore, Miss Nellie, 122 Falcon Ave., Long Beach. 1915.  
 Moore, Robert T., 46 Mansion Ave., Haddonfield, N. J. 1911.  
 Moran, R. B., 220 S. Wilton Place, Los Angeles. 1897.  
 \*Morcom, G. Frean, 243 N. Coronado St., Los Angeles. 1904.  
 More, R. L., Vernon, Tex. 1911.  
 Morgan, Miss Mattie Beth, 908 Jennings Ave., Fort Worth, Tex. 1916.  
 Morley, S. Griswold, 2535 Etna St., Berkeley. 1916.  
 Mueller, Carl, Marysville. 1911.  
 Mullen, James L., 1495 S. 2d St. E., Salt Lake City, Utah. 1915.  
 Munro, J. A., Okanagan Landing, B. C., Canada. 1914.  
 Murie, Olaus J., 219 7th Ave. S., Moorhead, Minn. 1913.  
 Myers, Mrs. H. W., 311 N. Ave. 66, Los Angeles. 1912.  
 Nevin, W. H., Pasadena. 1915.  
 Newhall, Mrs. Chas. S., 2629 Piedmont Ave., Berkeley. 1916.  
 Nichols, J. T., Amer. Museum Nat. Hist., New York, N. Y. 1909.  
 Nicholson, Donald J., Orlando, Fla. 1911.  
 Noack, H. R., 309 Perry St., Oakland. 1901.  
 Nokes, Dr. I. D., 134 W. 55th St., Los Angeles. 1914.  
 Norris, Joseph Parker, Jr., 2122 Pine St., Philadelphia, Pa. 1911.  
 Norris, Roy, 725 N. 10th St., Richmond, Ind. 1911.  
 Norton, Arthur H., 22 Elm St., Portland, Me. 1918.  
 Oberholser, Dr. Harry C., 2805 18th St., N. W., Washington, D. C. 1904.  
 O'Farrell, Mrs. Mabel E., 2403 F. St., San Diego. 1917.  
 Ohl, H. C., McKittrick. 1913.  
 Ohlendorf, W. C., 1924 Blue Island Ave., Chicago, Ill. 1910.  
 Osencup, Claten, 2029 N. Fair Oaks Ave., Pasadena. 1917.  
 Osgood, Wilfred H., Field Museum Nat. Hist., Chicago, Ill. 1893.  
 Osterhout, Geo. E., Windsor, Colo. 1915.  
 Overington, R. Bruce, 120 W. Lancaster Ave., Wayne, Pa. 1915.  
 Owen, Virgil W., 832 Beacon St., Los Angeles. 1896.  
 Palmer, Miss Elizabeth Day, 1741 Harvard Blvd., Los Angeles. 1909.  
 Palmer, R. H., Peoples Store Bldg., Pocatello, Idaho. 1915.  
 Palmer, Dr. T. S., 1939 Biltmore St. N. W., Washington, D. C. 1903.  
 Parker, Herbert, South Lancaster, Mass. 1911.  
 Parmenter, Henry E., 12th Naval Dist., 417 Sheldon Bldg., San Francisco. 1916.  
 Parsons, Mrs. Marion Randall, Mosswood Road, Berkeley. 1917.  
 Paschal, Robert L., Fort Worth High School, Fort Worth, Tex. 1916.

Paul, J. H., 1320 E. 2d St. S., Salt Lake City, Utah. 1915.

Paul, Lucius H., 1485 North St., Rochester, N. Y. 1911.

Peabody, Rev. P. B., St. James Rectory, Independence, Iowa. 1904.

Pearson, T. Gilbert, 2257 Loving Place, New York, N. Y. 1910.

Peck, Morton E., 244 N. 12th St., Salem, Ore. 1909.

Pemberton, J. R., 802 Starks Bldg., Louisville, Ky. 1900.

Peyton, Lawrence, Sespe, Ventura Co. 1909.

Peyton, Sidney B., c/o Roland Elliott, Grand Meadow, Minn. 1913.

Phelps, Frank M., 212 E. 4th St., Elyria, Ohio. 1912.

Philipp, Philip Bernard, 220 Broadway, New York, N. Y. 1911.

Phillips, C. L., 5 W. Weir St., Taunton, Mass. 1915.

Phillips, John C., Knobfields, Wenham, Mass. 1911.

Pierce, Wright M., Box 116, Claremont. 1902.

Pierpont, Philip, Nordhoff. 1913.

Pilsbury, Frank O., 1088 Main St., Walpole, Mass. 1911.

Pleasants, Mrs. J. E., R.D. 3, Orange. 1900.

Powell, Miss Helen, 2703 Dwight Way, Berkeley. 1914.

Pratt, Miss Alice Edwards, R.D. 4, Box 226K, San Diego. 1917.

Pratt, Miss Anna B., 1137 N. Vermont Ave., Los Angeles. 1916.

Price, A. E., Grant Park, Ill. 1905.

Price, Mrs. Elizabeth H., 23 Panoramic Way, Berkeley. 1917.

Pringle, Miss Cornelia Covington, Cupertino, Santa Clara Co. 1915.

Purington, Mrs. C. A., 4532 Latona Ave., Seattle, Wash. 1915.

Randolph, Miss Flora A., 2962 Derby St., Berkeley. 1907.

Rankin, Edward P., 1370 California St., San Francisco. 1913.

Rathbun, S. F., 217 14th Ave. N., Seattle, Wash. 1904.

Ray, Milton S., 220 Market St., San Francisco. 1899.

Redington, Robert R., Dupont Eng. Dept., Wilmington, Del. 1917.

Reis, C. Oscar, 646 Juanita Ave., Los Angeles. 1917.

Reynolds, L. R., 2971 Pacific Ave., San Francisco. 1913.

Rich, Dr. Guy C., 1820 El Cerrito Place, Hollywood. 1911.

Richards, E. B., 128 Chester St., Grass Valley. 1909.

Richards, Dr. T. W., Bureau Med. & Surg., Navy Dept., Washington, D. C. 1908.

Richards, W. W., 1512 Broadway, Oakland. 1915.

Richardson, W. D., 4215 Prairie Ave., Chicago, Ill. 1918.

Richey, J. Howard, 277 W. Dakota St., Pasadena. 1914.

Richmond, Dr. Chas. W., U. S. Nat. Museum, Washington, D. C. 1904.

Richmond, Watts L., Batavia, N. Y. 1915.

Riley, J. H., U. S. Nat. Museum, Washington, D. C. 1909.

Rittenhouse, Prof. Samuel, Univ. S. Cal., Los Angeles. 1916.

Ritter, Prof. W. E., La Jolla. 1901.

Roberts, Dr. T. S., Animal Biol. Bldg., Univ. Minn., Minneapolis, Minn. 1909.

Robertson, Howard, Box 639, Sta. C., Los Angeles. 1896.

Robertson, John McB., R.D. 1, Box 13, Buena Park, Orange Co. 1913.

Robinson, Webster, 5882 Towne Ave., Los Angeles. 1916.

Rossignol, Gilbert R., Jr., 2116 Bull St., Savannah, Ga. 1909.

Rowley, J., 42 Plaza Drive, Berkeley. 1909.

Rust, Henry J., Box 683, Coeur d'Alene, Idaho. 1911.

Sage, Jno. H., Portland, Conn. 1910.

Sampson, W. B., 1005 N. San Joaquin St., Stockton. 1894.

Sanford, Dr. Leonard C., 347 Temple St., New Haven, Conn. 1915.

Sanford, W. H., 919 W. Acacia St., Stockton. 1915.

Saunders, Aretas A., 143 East Ave., Norwalk, Conn. 1909.

Saunders, W. E., London, Ont., Canada. 1910.

Schaefer, Oscar F., 669 Genesee St., Rochester, N. Y. 1917.

Schlesinger, Mrs. Jane L., 1417 Filbert St., Oakland. 1915.

Schneider, J. J., Box 363, Anaheim. 1899.

Schussler, Geo. W., 1345 Oak St., San Francisco. 1911.

Sclater, William Lutley, 10 Sloane Court, London, S. W., England. 1909.

Scott, Carroll DeW., 4146 Jackdaw St., San Diego. 1915.

Shafer, Frederick P., 2538 Durant Ave., Berkeley. 1917.

Sharp, Clarence S., Escondido. 1902.

Sharples, Robert P., West Chester, Pa. 1911.

Shaw, W. T., 1000 Thatuna St., Pullman, Wash. 1911.

Shelton, Alfred C., Univ. Ore., Eugene, Ore. 1909.

Shepardson, Durno L., 1144 W. Edgeware Rd., Los Angeles. 1909.

\*Sherman, Althea R., National, via McGregor, Iowa. 1911.

Shiras, George, 3rd, Stoneleigh Court, Washington, D. C. 1914.

Silliman, Edmund, Alisal and Ryker Sts., Salinas. 1918.

Silliman, O. P., 220 Salinas St., Salinas. 1913.

Simmons, George F., 701 Holman Ave., Houston, Tex. 1913.

Skinner, E. H., R.D. 21, Regnart Road, Cupertino, Santa Clara Co. 1900.

Skinner, M. P., Yellowstone Park, Wyo. 1915.

Sloanaker, Jos. L., Kalispell, Mont. 1910.

Smith, Allyn G., 1508 Arch St., Berkeley. 1909.

Smith, Austin Paul, 2102 E. 83rd St., Cleveland, O. 1907.

Smith, C. R., 563 42d Ave., San Francisco. 1917.

Smith, Prof. Frank, 913 W. California Ave., Urbana, Ill. 1911.

Smith, Franklin J., Box 98, Eureka. 1913.

Smith, Horace G., 2918 Lafayette St., Denver, Colo. 1914.

Smith, Lance H., 1710 Waverly St., Palo Alto. 1915.

Smith, Wilfred, Box 163, Altadena. 1911.

Smyth, W. H., Fernwald, head of Dwight Way, Berkeley. 1918.

Smyth, Mrs. W. H., Fernwald, head of Dwight Way, Berkeley. 1918.

Snyder, Prof. J. O., Box 775, Stanford University. 1900.

Squires, Rev. W. A., 2 Vicksburg St., San Francisco. 1912.

Stafford, Walter A., 31 Park Way, Piedmont. 1917.

Stansell, Sidney S. S., Pocahontas, Alberta, Canada. 1915.

Steinbeck, William, 1029 N. Hunter St., Stockton. 1897.

Steinmetz, Frank J., 1021 Ramona St., Palo Alto. 1917.

Stephens, T. C., Morningside College, Sioux City, Iowa. 1914.

Stevens, Dr. J. F., Box 1546, Lincoln, Neb. 1911.

Stivers, Dr. C. G., 502 Auditorium Bldg., Los Angeles. 1914.

Stoddard, H. L., Field Museum Nat. Hist., Chicago, Ill. 1914.

Stone, D. D., R.D. 4, Oswego, N. Y. 1909.

Stone, Geo. E., 1725 Le Roy Ave., Berkeley. 1912.

Stoner, Emerson A., Box 444, Benicia. 1918.

Storer, Miss Mary S., 467 San Pablo Ave., Fresno. 1914.

Storer, Tracy L., Museum Vert. Zool., Berkeley. 1910.

Stormont, W. P., 116 E. Ave. 52, Los Angeles. 1917.

Stout, Gardner D., 129 E. 55th St., New York, N. Y. 1918.

Strong, W. A., 41 Grand Ave., San Jose. 1912.

Stuart, Geo. H., 3d, N. W. cor. Broad & Chestnut Sts., Philadelphia, Pa. 1913.

Sugden, J. W., 47 S. 8th W. St., Salt Lake City, Utah. 1915.

Suksdorff, P. J., Bingen, Wash. 1910.

Swales, B. H., Grosse Isle, Mich. 1906.

Swarth, Harry S., Museum Vert. Zool., Berkeley. 1897.

Sweeney, Joseph A., U. S. Forest Service, Halsey, Neb. 1912.

Swenk, Prof. Myron Harmon, 3028 Starr St., Lincoln, Neb. 1916.

Swezy, Dr. Olive, Zool. Dept., Univ. Cal., Berkeley. 1914.

Swift, Faith A., State Normal School, Los Angeles. 1916.

Sykes, Geo. F., 322 Agr. Hall, Corvallis, Ore. 1913.

Tallman, George, 2127 Court St., Los Angeles. 1915.

Tarbell, Miss Olga S., 1 Cabrillo Place, Pasadena. 1906.

Taverner, P. A., Zool. Div., Geol. Survey, Ottawa, Ont., Canada. 1909.

Taylor, E. F., Grass Valley, Nevada Co. 1910.

Taylor, L. E., R.D. 2, Reno, Nev. 1897.

Taylor, Dr. Walter P., Biol. Survey, Washington, D. C. 1905.

Terrill, L. McL., 44 Stanley Ave., St. Lambert, Quebec, Canada. 1911.

Test, Dr. Louis A., Ames, Iowa. 1908.

\*Thayer, John E., Box 98, Lancaster, Mass. 1906.

Thomas, C. Aubrey, 120 Broad St. S., Kennett Square, Pa. 1917.

Thompson, J. Walcott, 527 E. 1st S. St., Salt Lake City, Utah. 1918.

Todd, W. E. Clyde, Carnegie Museum, Pittsburgh, Pa. 1909.

Tompson, J. Alden, Bend, Ore. 1917.

Tope, L. A., Clearfield, Iowa. 1915.

Treganza, A. O., 610 Utah Svgs. & Trust Bldg., Salt Lake City, Utah. 1907.

Treganza, Mrs. A. O., Lemon Grove. 1915.

Trenor, T., Box 1149, Los Angeles. 1913.

Trescot, E. B., R.D. 1, Box 554, Santa Rosa. 1915.

Trippie, Thomas M., Howardsville, Colo. 1911.

Trowbridge, Chas. O., Box 42, Sta. A., Framingham Center, Mass. 1915.

Trumbull, J. H., 39 Farmington Ave., Plainville, Conn. 1911.

Tufts, Robie W., Wolfville, Nova Scotia, Canada. 1917.

Tyler, John G., P. O. Box 445, Turlock. 1905.

Tyler, Dr. Winsor M., 522 Massachusetts Ave., Lexington, Mass. 1914.

Ufford, Elmer, Oberlin, Kan. 1917.

Unglisch, W. E., 6th St., Watsonville. 1910.

Van Denburgh, Dr. John, 240 Stockton St., San Francisco. 1916.

Van Fleet, Clark C., Box 468, Santa Rosa. 1906.

Van Rossem, Adriaan, Co. C, 322d Field Signal Battalion, Camp Lewis, American Lake, Wash. 1909.

Van Straaten, H., Nat'l. City Bank, New York, N. Y. 1918.

Vilas, A. H., Brackett Apts., San Barbara. 1916.

Vorhies, Chas. T., Univ. Ariz., Tucson, Ariz. 1916.

Walker, Alex., Tillamook, Ore. 1911.

Walker, Ernest P., Alaska Fisheries Co., Wrangell, Alaska. 1910.

Wall, Edward, Box 554, San Bernardino. 1913.

Warburton, Stanton, Jr., 2612 N. Union St., Tacoma, Wash. 1917.

Ward, Miss Emma W., 1539 Versailles Ave., Alameda. 1917.

Ward, F. H., 18 Grove Place, Rochester, N. Y. 1915.

Warren, E. R., 1511 Wood Ave., Colorado Springs, Colo. 1909.

Wear, Miss Winifred N., 253 Coast Ave., Fresno. 1909.

Weber, J. A., Box 327, Palisades Park, N. J. 1915.

Webster, Mrs. Jennie E. B., Univ. Soc., 44 E. 23d St., New York, N. Y. 1918.

Weed, Benj., 822 Clayton St., San Francisco. 1911.

Welch, L. W., 1845 Olive Ave., Long Beach. 1911.

Wells, G., Pac. T. & T. Co., Donner, Placer Co. 1911.

Welsh, Joseph, Pasadena Hdw. Co., Pasadena. 1917.

Westerfeld, Dr. Otto, 240 Stockton St., San Francisco. 1915.

Wetmore, Alexander, Biol. Survey, Washington, D. C. 1909.

Wheeler, Mrs. J. W., R.D. 1, Tucson, Ariz. 1912.

Wheeler, Roswell S., 5760 Shafter Ave., Oakland. 1894.

Wheelock, Mrs. H. B., 1040 Hinman Ave., Evanston, Ill. 1909.

White, E. A., R.D. 1, Box 131, Santa Paula. 1915.

White, Halsted G., Claremont. 1914.

Widmann, O., 5105 Von Versen Ave., St. Louis, Mo. 1904.

Wiggins, Dr. C. G., 1191 N. 9th St., Colton. 1916.

Wilder, H. E., Carlotta, Humboldt Co. 1909.

Wiley, Leo, Shandon, San Luis Obispo Co. 1916.

Willard, B. G., 1619 Massachusetts Ave., Cambridge, Mass. 1910.

Willard, F. C., Farmingdale, Long Island, N. Y. 1905.

Willett, Geo., 2123 Court St., Los Angeles. 1905.

Williams, John, R.D. 9, Iowa City, Iowa. 1918.

Williams, Robert W., Tallahassee, Fla. 1914.

Wilson, J. Frank, 337 Highland Place, Monrovia. 1915.

Winter, Miss Oilo A., R.D. 2, Box 53, Anaheim. 1918.

Witter, Elizabeth Gooding, 2301 Durant Ave., Berkeley. 1917.

Wood, Dr. Casey A., Chicago Svgs. Bank Bldg., Chicago, Ill. 1916.

Wood, George, 7403 Hawthorne Ave., Hollywood. 1912.

Wood, Jesse J., 309 W. Micheltoreno St., Santa Barbara. 1912.

Wood, Norman A., Museum Zool., Ann Arbor, Mich. 1916.

Woodruff, Frank M., Chicago Acad. Sciences, Chicago, Ill. 1906.

Wright, Curtis, Jr., 6436 Benvenue Ave., Oakland. 1916.

Wright, Frank S., Room 114, Metcalf Block, Auburn, N. Y. 1910.

Wueste, Rudolph, Lower Otay Dam, Bonita. 1901.

Wyman, L. E., 3927 Wisconsin St., Los Angeles. 1908.

Wythe, Margaret W., 4247 Terrace St., Oakland. 1912.

Young, John P., 5522 5th Ave., Pittsburgh, Pa. 1914.

Young, Pauline Rodgers, Canille, Santa Cruz Co., Ariz. 1918.

Zahn, Otto J., 2115 Estrella Ave., Los Angeles. 1896.

Zech, Miss Lilian, 119 Magnolia Ave., Long Beach. 1916.

Zerlang, John, Samoa, Humboldt Co. 1918.

Zerlang, Lawrence, Samoa, Humboldt Co. 1918.

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